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THE GIFT OF

JAMES BRYANT CONANT

CLASS OF 1914

President of Harvard University



DUSTY AIR AND ILL HEALTH

"Having long been a student, I thought myself qualified in time to become an author

"At last I began to write, and as I finished any section of my book, read it to such of my friends as were most skilled in the matter which it treated. None of them were satisfied; one disliked the disposition of the parts, another the colours of the style; one advised me to enlarge, another to abridge. I resolved to take my own way and write on, for by consultation I only perplexed my thoughts and retarded my work

"At last there came a grave man, who desired to see the work, and without opening it told me, that a book of that size 'would never do.'"

SAMUEL JOHNSON.

DUSTY AIR

AND

ILL HEALTH

A STUDY OF
PREVALENT ILL HEALTH AND CAUSES

ROBERT HESSLER, A. M., M. D.

PRINTED PRIVATELY

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PREFACE

Ill health is a topic that concerns all of us. If we do not have ill health ourselves there are sure to be relatives or friends to give us concern. In order to suffer one need not be sick.

An observant patient told me there are two classes of people whom one can always interest. First, those who have saved a little money and want to know how to invest it safely so it will bring in some returns. Second, those who have not the best of health and want to know how to better it. These two classes will exist as long as human society lasts.

It is generally admitted that ill health, and particularly chronic ill health, is one of the great causes of misery and of poverty.

We should try to discriminate between ill health and disease. Few men living under unsanitary surroundings, as found in cities and towns, or who occasionally come in contact with them, are wholly free from symptoms of ill health. As a matter of fact, ill health (that is symptoms) affects many of us constantly. Well-defined disease on the other hand occurs only at long intervals, indeed may not appear until near the close of life. Moreover well-defined specific diseases are as a rule readily diagnosed by the skilled physician, while in the case of many common ills diagnoses vary greatly. An old chronic is apt to get all sorts of diagnoses, including that of imaginary ill.

To what extent shall we ignore minor ills or symptoms? To what extent shall we heed them and indeed study them and find out the reason or cause? (If the "old chronic" relies solely on the medical profession for relief he is apt to be disappointed—he must study himself.)

The manuscript of this volume has been discussed with a number of people, especially with "dust victims," with people who react to dusty air, and with people who have had much experience with ill health. Many topics here briefly touched upon have been discussed at length.

This is not a "family doctor book," nor is it a "complete guide to health," because certain kinds of cases only are considered and a certain factor is emphasized. Properly considered this is a monograph on dust influences.

A physician meets all sorts of patients, all sorts of dust victims. For some a short explanation suffices, others require details and repetitions. A book like this may be compared to a newspaper: it appeals to a variety of readers. Some things are read by headlines, entire pages may be skipped.

This volume is not written for the practitioner of medicine: he wants greater details, he wants detailed case reports and facts rather than explanations and discussions. Nor is it written for those who want positive or dogmatic statements; on the contrary the aim is to show that much is still to be learned and that the general reader can assist in solving some of the problems relating to ill health.

The primary ideas underlying this volume are based on observations on first entering medical college in the fall of 1889. The author's first "Dust paper" was written in 1893. Since the summer of 1900 he has made a systematic study of dust influences and has presented papers before medical and scientific societies. In the preparation of this volume published papers have been freely drawn upon. The case reports and discussions were selected from a large original collection.

It is said that facts are stupid things until brought into connection with some general law. Often a mass of facts are explained by some hypothesis. A theory that satisfactorily explains many facts and that enables us to predict becomes a working theory, of value in our daily life.

This volume may be considered as a contribution to the discussion of the dust evil or the dust problem, especially in relation to ill health. Dust is a neglected factor in ill health.

March, 1912.

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INTRODUCTORY.

In the course of time a physician meets all sorts of people having all sorts of ill health (not to speak of well-defined diseases) with all sorts of explanations, both for their own ills and for those of others and of whole communities. It is the exceptional individual who does not have some sort of explanation. Those with much ill health as a rule give attention to matters with which the well or healthy are not at all concerned.

From what sources do the people learn about common ills and common ill health and causes? Manifestly from observations, from discussions, from readings, and from consultations and perhaps from discussions with physicians.

The interest a man takes in a subject often depends on how intimately it concerns his welfare; he may neglect mild symptoms but he must heed severe ones.

Among individuals in chronic ill health are those who neglect symptoms; they are few in contrast to the many who are inquisitive, some so much so that they become an annoyance to the physician who is not interested in ordinary ill health, only in well-defined diseases. As a rule chronics make the rounds of the doctors and perhaps try all modes of treatment; some try all the patent medicines that appear, even faith or mind cures. Some believe in trying all things and holding on to that which is good. Some will try a thing only if it appeals to their reason. I know old chronics who never took patent medicines; one may say such persons are exceptional.

Need it be added that there are all sorts of people with all sorts of wants and needs and that there are all sorts of "medicine men" to supply wants? Some people expect medicine only, they want no explanations. Some want large doses, other small doses. Some want a maximum of explanation with a minimum of medicine. Exceptionally a man may apply for advice only, not for medicine

—such exceptional cases have become more and more common in the last few years.

Now in the very beginning it should be kept in mind that there are exceptions to every general statement. One can scarcely make a general remark without adding some qualifying words or clause, and one can scarcely make any remark but some one cites an ex-Therefore it should be understood that in this ceptional case. volume I have in mind the nine-tenths that come within the scope of general remarks, neglecting the tenth as perhaps wholly exceptional. Out of ten cases, or patients, nine may have traits, complaints, wants and desires in common, the tenth may differ radically. Out of ten people who complain of ill health, perhaps only one goes to a scientific physician. Out of those who do apply to physicians, likely nine-tenths complain of common ills; it is the tenth, the exceptional case, that may have a specific disease demanding specific or special treatment. Of ten physicians, nine will likely have certain traits or characteristics in common, people know what to expect; the tenth may be exceptional, he may be an unusually skilled physician, or, on the other hand, he may be a charlatan of the worst kind.

Somewhat similar remarks may be made regarding our newspapers: they get all sorts of criticism. And yet, after all, nine may be little criticised; it is the tenth that comes in for any amount of denunciation on one side or praise on the other. Again, we constantly speak about the weather, but no one speaks of the ordinary or average weather; we only talk about the extremes of heat or cold, of dry or wet; ordinary weather is scarcely considered, and yet extreme variations are exceptional.

In this work my intention is to speak of people in ill health; moreover of the "general run of cases," not of the exceptional case. The kinds of cases to be dealt with are what may be called "old chronics," people who have been complaining for some time, who have perhaps made the rounds of the doctors, in short have tried all sorts of remedies and modes of treatment. In other words, I am writing about people who complain of ill health for people who have more or less ill health. Perhaps nine-tenths may be

benefited by my advice; the tenth, the exceptional case, may neither be interested nor does my advice apply.

In order that a physician may give good advice he must study his patient, his family history, and the surroundings under which he lives. Good advice implies investigation. If both patient and physician work together they may arrive at some definite conclusions. If the doctor assumes that he knows it all and his patients know nothing there is not apt to be a lasting relationship of patient and physician. If a man doubts the abilities and knowledge of a physician no relationship may be established. On the other hand, if a man is too ignorant to make long explanations worth while, the physician may not accept him at all or else dismiss him at the first opportunity. With ignorance even the gods strive in vain. There may be exceptions to all these statements.

The problem of ill health is really a biological problem, to be solved like any other problem, by patient study and observation!

Discussion is necessary to arrive at the truth, but discussions should be of essentials. The physician may assume certain things to be of prime importance, but his patient may be inclined to dwell on unessential details. "Old experienced patients" soon learn to make distinctions.

From my notes and "case reports" for the last twelve years, I have laid aside a number for remarks on topics connected with the subject of ill health, and particularly chronic ill health, as opposed on the one hand to health and on the other to well-defined or specific diseases. With some patients I had many and long discussions; we tried to learn. I shall briefly refer to a few cases and supposed causes. Needless to say in cases where notes extend over a long series of years only brief abstracts can be given; to do some cases justice would require a volume for each.

In studying anything it is best to begin with the simple and gradually trace it into the complex. The farmer leads a comparatively simple life and lives under a simple environment and causes of ill health may perhaps be more readily traced. But the term farmer is rather vague, there are all sorts of farmers. Similar

remarks apply to the term country or city or "out West." What do we mean by these terms? There are all sorts of farmers, good, bad and indifferent. What do we understand by a "typical farmer?" Manifestly the one who regularly attends farmer's institutes, who takes prizes at farm and poultry shows, is a different individual from the mossback, hayseed or rube who comes to town at short intervals to loaf on street corners and spit tobacco juice. Only too often the latter is merely a tenant on a rundown farm, with no inducement to look ahead and build up the soil.

I shall have frequent occasion to refer to farmers and unless the contrary is mentioned it should be understood that I am referring to those of the better class. Needless to say I have had some of the worst type as patients, often for only a short time because there was little in common between us. Next to being a physician I should like to be a farmer; although I have never lived on a farm, I believe I should enjoy it.

A farmer of eighty years, one of the original "old settlers," from an adjoining county, came to me complaining of an irritation of the respiratory mucous membranes marked by more or less profuse secretions. He had always lived in the country, remote from town life, until a year ago when he rented out his large farm and removed to a small village. He now spent much time at the village store on the proverbial cracker barrel. Soon he began to complain. He consulted first one, then the other of the two village or country doctors, but since neither helped him he came to the conclusion he had some "new-fangled disease which the country doctors did not understand." He concluded to consult a town doctor. On coming to me he said, "The country doctor is good enough for the common ills and ailments, but it takes somebody who has studied more and has had more experience to treat these new-fangled diseases that are constantly coming in." The man had had little schooling and had little book learning, but he was a shrewd observer. He thought he had some new or unusual disease, possibly due to "change in the climate." It turned out, however, that his affliction was due to change of environment, of exchanging the air of an isolated country home for that of a village, and particularly of the village store where spitters congregate about the stove, especially on winter days, and contaminate the air. Instead of having a rare disease, he had become afflicted with a very ordinary malady, nothing more than common catarrh.

Now a physician can make an offhand diagnosis, merely saying, You have catarrh, and give a prescription or dispense a medicine, or give more or less general advice regarding treatment, perhaps with some advice regarding prevention, but unless the patient clearly understands the relationship of cause and effect he may be wholly unable to guard himself. Quite probably in time he tries other physicians and also "catarrh cures" advertised in the newspapers or recommended by druggists. Some people will save and starve in order to buy medicines "guaranteed to cure," nostrums which a physician knows can not cure; they meet others who have been doing the same thing, who have made the rounds, and in time they come to believe that catarrh is incurable, and, since it is so prevalent, they are inclined to believe that "everybody has catarrh."

To what extent do physicians explain the why and the wherefore and the nature of catarrh and how it passes or travels from one to another (by means of dried catarrhal spittle inhaled as dust), and that it should be looked upon as a preventable reaction rather than as an incurable disease?

My patient spoke of "new-fangled disease," meaning some newly arrived or recently discovered disease. To some extent a similar explanation dwells in the minds of some physicians—instead of looking for common causes and for common affections they are always looking for uncommon ones and for rare diseases, reasoning that others overlooked them or else did not recognize them.

The farmer also spoke of "changes in climate." "It's the climate" is a common explanation of ill health (not to speak of disease) that can not otherwise be accounted for. But people forget that we really have two climates, a natural one out of doors, an artificial one indoors. Many house-plants do not flourish in-

doors, they merely winter over; on being put out in the spring they thrive. Many people are in the same position. Moreover the natural climate may itself be modified, as in the large city with an absence of trees and grass, with dense smog clouds obscuring the sun.

This old farmer was shrewd. When I pointed out what had occurred, he promptly changed his mode of life, particularly by avoiding "bad air," and the reaction ceased, in other words, his "disease" disappeared.

We had many discussions regarding early Indiana conditions, he was one of the pioneers. I have made these discussions the basis for a short chapter on Changes in our State, changes that are more or less common to other States. The subject of climate will also be briefly considered later.

The farmer's ideas that "city doctors know more" referred to a very debatable topic. A doctor may cover the whole field of medicine, treat everybody that applies, or he may devote himself to a very small field and know that field thoroughly. No man can know it all; he may have a general knowledge, more or less diffuse, or special knowledge applicable to comparatively few cases. From whom will the mass of people, the nine-tenths, complaining of common ills get the best service?

Specialists of necessity are found only in cities where they find enough cases to keep them busy and where people go to find them. A country specialist "can not be a good one," people reason, or he would go to the large city. In general this is true, but there are exceptions.

In the city the "family physician" has largely disappeared, each member of a family may have a different physician or consult different ones on different occasions or for different ailments. In the country the family doctor still flourishes. In the case of common ills he is the best man to consult. But naturally enough if a man finds his complaints persisting and if he gets no satisfactory explanation why he is still uncured and is perhaps incurable (although his complaints may be wholly preventable), he may feel like consulting the city doctor who is supposed to know more

—just as some people go to the great German specialists who are also supposed to know more. In the case of our common ills, especially our "Triad of National Diseases" (catarrh, dyspepsia, and nervous prostration) we may question whether foreigners know more than our own physicians. The best physician, like the best naturalist, is the one who knows his own parish best.

Another farmer, a middle-aged man of unusual intelligence, came to me saying he was told I had the reputation of trying to find out the causes of ill health and disease. He said he felt bad every time he came to town or went into a crowd, he would feel achy throughout the body, with more or less mental dulness or headache, and an irritation of the throat, at times he would have a decided cold. He had had various explanations from physicians but none enabled him to prevent attacks. Could I explain the nature of the attacks and give some advice on how to prevent them?

I promptly recognized him as a "Dust Victim" and told him I knew a lot about such cases, for I myself reacted when air conditions were very bad. He listened closely to what I told him about my own experiences and to my explanations; said he had long suspected dust as the cause of his attacks, but he now saw that he did not distinguish between kinds. I explained what "infected dust" meant. Kinds of Dust will be considered later.

I assumed he would return "for further instruction" and that I would get more data, but he did not return. The simple explanation was all he needed; I learned this a few years later through a common friend.

Another patient, a farmer's wife living near the first mentioned farmer, came to me with symptoms of ill health which were supposed to be due to malaria. She had been dosed with quinine, at times to such an extent that she became weak and anemic and had to "rest up"—in order to take more quinine. She had been given various explanations for her continued ill health, "malaria"

¹ As a matter of fact I had the reputation of being a pathologist; physicians often sent me obscure cases to be worked out.

Since this volume is based mainly on personal experiences and observations and a first-hand study of people in ill health, there of necessity is frequent occurrence of the pronoun I.

was most frequent. She had also been told "It's grip." I was able to point out to her that something else was at the bottom of her symptoms and that what she needed was not quinine but out-of-door air. When she lived up to my advice she soon found that it was not malaria.

The belief that malaria is the cause of much of the common ill health is an old one; if it is not malaria outright then it is "malarial," "concealed malaria," "a touch of malaria," if not "miasmatic." Real malaria (malarial fever) was formerly very common in Indiana and any case of illness was at once supposed to be malaria or due to malarial or miasmatic influences. The belief in malaria as a cause of common ill health has largely disappeared among medical men, but lives on among the people, fostered by some patent medicine men. With no instructions how are the people to know better? The belief will no doubt gradually die out with the disappearance of people who lived when malaria was widely prevalent. The term malaria literally means bad air; it goes back to ancient days.

There is an old time belief that night air is injurious. This belief goes back to the early days when people who went indoors at sundown were less likely to be affected by malaria, because the mosquito that transmits malaria flies and bites by night. Log houses filled with more or less smoke from the open fireplace or merely the odor of smoke, were not visited by mosquitoes. There is still another factor, the smoking of tobacco. To smoke means to drive away mosquitoes. What is more natural than that people living under simple life conditions should smoke in the evening, not only the men but also the women? The plea that tobacco keeps away disease and ill health might at one time have been made with good reason, but it no longer holds. Malaria today is a rare disease. (I live in a locality once highly malarial, but the disease is now rare; I have not seen a single case for nine years.)

When we read biographies of men who have had much ill health, we find that at various times different explanations have been used to a large extent. William Cullen Bryant mentions how the doctors of his time explained all ill-defined cases by "It's malaria."

"It's malaria" was a common explanation in our State. It is still used to some extent but is falling into disuse, because real malaria has almost disappeared. People are beginning to understand that a certain kind of mosquito transmits the disease and that before the mosquito can transmit it it must have bitten somebody who has real malaria. Hence a suspected case of malaria without any other cases of malaria about, or occurring in midwinter when there are no mosquitoes, leads to suspicion regarding the correctness of the diagnosis. Moreover the careful physician nowadays examines the blood of his patient and is able to make a definite diagnosis, whether malaria is present or not, he no longer guesses or even ventures a guess at the diagnosis, and he no longer overdrugs his patient with quinine.

"It's grip" is still a common explanation especially when many are attacked, as after a midwinter thaw. Since the appearance of influenza in the winter of 1889-90, "It's the grip" has been frequently heard. Grip is one of the synonyms for influenza. It has largely taken the place of "It's malaria." As a matter of fact, real grip is an epidemic disease that comes at intervals of years and attacks practically everybody, killing many. What is now commonly called "grip" may be said to be merely a severe form of "common cold." Is the term "grip" more terrifying than "cold?" Are the doctor's patients more likely to follow his advice if told they have the grip?

"It's what I eat" is a frequent explanation. People accuse this and that article of food and avoid it. A physician occasionally meets people who live on toast and weak tea. Food may of course be a cause or factor of ill health and continued ill health but more often it is less a question of what is eaten than of conditions under which food is eaten. Take, for instance, pie; whether one eats it at home fresh from the oven or at a restaurant where it has been exposed to the air and flies and dust for hours may make a marked difference in after-effects. Similarly with foods that have been exposed before stores to the dust of side-walks. Sanitarians fully recognize the importance of clean food. Today there are all sorts of laws and ordinances, the latest prohibiting

exposure of food to street dust. Such restrictions do not apply to the farmer living in isolation; he gets clean or pure food at first hand.

For countless ages man, like other animals, has been thriving on natural foods. Some animals thrive only on certain foods; they become extinct with a disappearance of the supply. It is only comparatively recent that the process of adaptation to artificial foods has begun. Manufacturers make all sorts of foods to sell, some is so injurious that it must be prohibited. Improper food is especially severe on infants and those whose digestion is impaired. Of the average person of our country it may be said that he subsists on plain substantial and nutritious food and that in the absence of other injurious factors he thrives on it. The underfed people of many countries readily fall a prey to ravaging diseases. With us starvation is practically unknown but cases do occur now and then, mainly in the slums of large cities. The isolated traveller on the desert dying from starvation belongs to an entirely different category.

Primitive man was an open air animal, seeking shelter only at night and during cold weather. Under a nomadic mode of life there was no accumulation of filth. Two thousand years ago the people of northern Europe were still open air people. In many countries today the urban population exceeds the rural, indeed, many rural people are massed in villages, more or less constantly in contact with each other, giving diseases an opportunity to go from one to another, just as in large cities. People who may be considered truly rural are becoming rare. The modern flat dweller is an extreme development of the indoor life habit, but such a mode of life is very destructive to the race; it virtually means race suicide.

Old time cities were very unsanitary, there was a constant weeding out of humanity, especially where there was impure water and bad food. But old time cities were not overhung with smoke and dust clouds like our modern industrial cities, consequently there was no weeding out on account of such air conditions.

In a general way it may be said that a given number of hours

out of doors offsets life under indoor air conditions. The time necessary may vary greatly in different individuals. Some can maintain health with a minimum of outdoor air; others are so susceptible to indoor air that they can not live in a city at all.

People of course vary in their tolerance of bad food. Among slum children who live out of garbage pails the mortality rate is high, but a certain number will reach maturity. Some foods we know are very indigestible and yet some persons are able to thrive on them. For instance, we hear it said that men can thrive on sauerkraut and limburger cheese, rye bread and beer. Usually we say they have "strong stomachs." But what of those who live on fried potatoes, pancakes, soda biscuits and steak fried in grease?

When our State was first settled game was abundant. The only kitchen utensil some of the early settlers had was a skillet, even today the prospector going into the wilderness has his skillet. It would seem that people who live under good air conditions can thrive on foods fried in grease to an extent that people massed in unsanitary cities can not. Food fads of all kinds thrive in unsanitary cities. City physicians generally advise against the use of fried food. It is perhaps needless to add that people who thrive on fried food are not apt to consult a physician at all.

The early settlers took advantage of the native food supplies, game of all kind and wild fruits. They had a good supply of the latter and some were looked upon as delicacies. My old patient, mentioned a few pages back, spoke of papaws, how they were eaten freely, and yet some people today think them rank poison. In discussing the question we came to the conclusion that people leading the simple open air life can tolerate many things that city stomachs can not. But perhaps the greatest factor in giving the papaw an evil reputation is the fact that city people get them after the fruit has passed through many hands and is black, soft, partly decayed, in fact must be regarded as a culture medium for all sorts of microorganisms. No wonder their use produces bad effects. I have met people who could not eat a papaw in the city but could eat them without evil effects direct from the tree. One may say similar arguments apply in the case of milk. There are undoubtedly in-

dividuals with whom milk disagrees but they are rare, provided they use milk direct from a healthy cow. Milk bought at the corner grocery may be loaded with micro-organisms of all kinds; no wonder it is injurious.

A young farmer came to me complaining greatly, expressing his belief that "It's what I eat." Later on I shall tell how we found out differently.

Drinking water is often accused of being the cause of more or less continued ill health. Water supplies vary greatly. A spring on an isolated farm may supply pure or clean water while one in or near a town may be highly contaminated. Similarly with wells; well water may be clear and sparkling yet highly polluted. Disease germs are very minute and water may be full of them without showing any turbidity. It is the invisible dangers we have to guard against. In cities that have muddy water in the mains, people often or usually resort to clear well water. City people with water at times of doubtful purity are of course familiar with the cry of "Boil the water," especially when an epidemic threatens, particularly typhoid fever. The prevalence of typhoid fever in a city is regarded as a general index of its salubrity. Well-managed cities have practically no typhoid fever. But there may be much ill health erroneously ascribed to water. Bad water is undoubtedly an important source of disease, as typhoid fever and diarrheal affections, but to what extent general ill health is dependent upon it is a problem, often it is difficult to rule out complicating factors.

In a general way it may be said that people who pay no attention to the purity of their drinking water are equally careless in other respects. Often the physician finds it difficult to discover the actual cause of ill health, he may not even attempt to rule out one thing after another. A man who lives under unsanitary surroundings, or comes in contact with the sick and diseased, who drinks bad water and eats food of doubtful purity, and breathes contaminated air, such a man is a problem to a physician. On the other hand the student of ill health may more or less readily trace causes among people living in isolation, as the farmers just men-

tioned as well as city people who are cleanly, who use clean water and clean food and who will give attention to the matter of good or bad air. The moment a city gets a clean water supply the general standard of cleanliness is raised and ill health and disease are reduced.

"Abe Martin" speaks of "pump towns," meaning that a town either has no municipal supply or that the supply is of such a character that pumps are still in use, hydrant water may be too dirty even to bathe in. Some people when they come to a doctor expect a lot of sympathy besides a valuable prescription, but like the Pharisee of old, instead of high sounding phrases they may be told to wash and be clean. Clean water and clean streets go together. Some cities, Berlin for instance, scrub their streets. In some small cities for a woman even to sweep the sidewalk in front of her house is regarded as an oddity.

One of my early patients ascribed all her ills to the matter of clothing. She was either dressed too little or too much. She could not tell when to wear wool or cotton. Every little cold she caught was ascribed either to getting chilled or getting overheated. I was able finally to make it clear to her that the matter of clothing was a secondary one, that under good air conditions all that was necessary was to be comfortably dressed.

Many of us can remember how red flannel around the throat was supposed to be both curative and preventive of colds and sore throat. Indeed red flannel was reputed to ward off illness, especially that due to cold, and underclothing was made of it. Today red flannel has practically disappeared but we still hear and read regarding the value of different fibers, especially cotton and wool. The question is sometimes asked, What is the "healthiest color" to wear? White, I promptly reply. "But white shows dirt." Exactly, that means to keep clean. Men are constantly making fun of women's dresses but from a sanitary standpoint they are

¹ From the standpoint of the physician the present style of short and narrow skirts is a great improvement over the former full and trailing skirt that collected any amount of filth. Incidentally, the nostrum maker who advertises obesity cures has reaped a harvest from fleshy women who only too often suffer in health in attempting to reduce their weight. Although fashions go to extremes, there is no need for an individual to resort to extreme measures in order to be fashionable.

ahead because their dresses are frequently laundered while men's clothing (we need only think of the old greasy tramp) is worn week after week and month after month, and if there is anything that accumulates microbes it certainly is an old suit.

The Chinese wear clothing that can be washed; they are more cleanly than we in the matter of dress. The Japanese in their last war with Russia appreciated the importance of clean clothing free from infection. They put on clean (that means sterilized) clothing before going into battle and as a consequence they had a very low death rate on account of injuries. Clean clothing meant no infection was carried into the wounds. I recall a statement regarding the Communists of Paris, how even slight injuries proved fatal, the reason assigned being the use of alcohol.

Now alcohol for a long time has been accused of doing all sorts of things. It makes the sick well and the well sick. It cheers and it dulls sensibilities. According to some (not only doctors but also scientists who are supposed to have made careful studies, perhaps experiments) alcohol is a food, according to others it is a poison. Formerly physicians used it freely, now some never prescribe it. The people themselves are divided into two camps, those who use it and those opposed to its use. In our State the alcohol question is a great political issue.

Since the Commune of 1871 a new science has arisen, bacteriology. At that time practically nothing was known regarding microbes and the role they play in infection, not only of wound infection but general infection. In the light of bacteriology physicians now readily understand how soldiers in the city were surrounded with infection on all sides and how injuries through dirty clothing brought on infection, why even slight wounds were fatal, and why on the other hand, the Japanese in the Russo-Japanese war so largely escaped infection by acting upon the principles of bacteriology and wearing sterilized clothing. The latter moreover lived in the open air.

In our Civil War, General Sherman noticed that his soldiers while on the march or in camps away from towns escaped much sickness and even common colds. The mortality from wounds and

from sickness was much greater in city hospitals than in field camps. The surgeon today is fully alive to the question of clean-liness.

In a general way it may be said that pathogenic or disease-producing microbes occur only where men are massed together. Practically speaking they do not occur in the isolated country. A hunter and trapper in the wilderness, for instance, can injure himself in all sorts of ways and recover promptly, while a mere pin scratch under dirty city conditions may lead to "blood poisoning," to infection. Not only are our clothing and skin full of infection but also our food and water and air; common pus germs (staphylococci and streptococci) are abundant where people are massed. The city resident must be cautious. People living in isolation escape many dangers due to infection from others.

A long chapter might be written on the influence or relationship of clothing to health and ill health, but there is one point that is generally overlooked, the relationship of clothing to the purity of the air. People living under bad air conditions find it difficult to regulate the amount of clothing, while people living under good air conditions scarcely notice even marked changes in temperature. The same is true regarding the heating of houses. Under good air conditions a lower temperature suffices to feel comfortable, while under bad air conditions we want houses and halls and railway coaches overheated. The reason Europeans complain of our houses being overheated is perhaps not far to seek. When we consider that the spitting habit (and that means air pollution) prevails in our country as nowhere in Europe the explanation is plain.

A very common explanation of ill health in school children is "overwork." The fact that school houses are poorly ventilated and that the air is bad is very seldom considered at all. As a matter of fact there is "overwork," but it is an overworking of the defences of the body in keeping off infection. But that is not the kind of overwork that parents and teachers have in mind.

In the local high school, for instance, the question of overwork is intimately connected with the question of proper clothing, as

these in turn are connected with the matter of ventilation, and that means more particularly supplying the students with dust-free air of proper temperature. Here I can not go into details. I will merely state that the laboratory class room is in the cold and dark basement and children need to be warmly dressed. The next hour they are in the Assembly room on the top floor, with a tropical, an overheated, atmosphere, and then they complain of the heat. How are the children to know what is a proper amount of clothing? The basement teacher tells them to dress warmer, while the teacher in the upstairs rooms may tell them they are too warmly dressed.

In this connection I am reminded of the remarks of a plumber who was consulted about the heating defects of a large two-story school building in an adjoining town. A few of the rooms received most of the heat of the boiler and usually were overheated; other rooms were too cold. He found that the school authorities attempted to produce an "equable temperature" in a ridiculous way, using thermometers that did not read true. They attempted to mislead those who judged a comfortable temperature by some instrument. Rooms that had too much heat were supplied with thermometers that read too low, and cold rooms with some that read too high, the extreme variations between thermometers being eleven degrees. In these days of instruments of all kinds there is a tendency to overlook the feelings and sensibilities. It should be remembered that the teacher is constantly moving about while the pupil sits still.

It was just mentioned that microbes and disease germs occur in proportion as people are massed together. The explanation for that is simple: There are all sorts of pathogenic or disease germs growing in all sorts of animals (not to speak of plants, for they also have diseases). Some grow in one animal, some in another; for instance, there is chicken cholera and hog cholera and human cholera. Disease prevails in proportion as there is a massing together under unsanitary conditions. Farmers have learned that hogs do not thrive under unsanitary conditions, no more than human beings. The Agricultural Department is constantly telling

the farmer how to protect his chickens and hogs and plants but it has nothing to say how to protect himself or his children. We need a National Department of Health.

Many germs grow in or upon the human body and the body in attempting to get rid of them reacts and the reaction is known as disease. Diseases may be recognized either by their active causes or the grouping of their symptoms. Microbes or parasites may be very minute or they may be large. The active causes of influenza, or diphtheria, or of consumption, for instance, are very minute. On the other hand there are parasites living in the intestinal tract that may be many feet in length, tape worms. In the South the hookworm is a very important cause of ill health and disease. It is just visible to the unaided eye.

Microbes and parasites from the sick get into and on to the bodies of the well by various ways, by direct contact, or through clothing, or through food, through water or air. Itch or ringworm, etc., travel from one to another, many through direct contact. Typhoid fever and cholera are transmitted from one to the other mainly through drinking water. Consumption, bronchitis, catarrh and colds travel mainly through the agency of dust particles in the air, that is, the secretions and excretions on the floor or ground are dried and pulverized and float in the air as dust and when inhaled reproduce the affection or disease.

Some individuals are very susceptible to infection, others quite resistent. It is the old story of seed falling on good or on stony ground. (But in general it may be said that if conditions are favorable no one escapes infection.) Weeds do not appear in a field unless the seed is brought in and the seed must be in a condition to germinate and find conditions for germination favorable. So with disease germs. If the seed is too old or perhaps has been sterilized by bright sunlight, it is no longer able to germinate, and hence "dust full of germs" may or may not produce disease and ill health. Dust exposed to bright sunlight for even an hour or two is sterilized. Such an exposure is equivalent to cooking the seed, in fact, "boil the water" means to kill typhoid and other germs. On the other hand, the seed, i. e., disease germs, preserved

indoors may retain vitality for a long time. The farmer knows the importance of exposing vessels for milk to the bright sunlight and of freely ventilating the cellar where fruit is kept, keeping the air sweet, not mouldy. The spittle in dust of public halls may retain its virulency for months.

As a rule school children do not spit on the floor but they bring in filth and germs from the sidewalks and they distribute infectious matter from running noses, as when they shake out the hand-kerchief previous to use. Unless there is free ventilation constantly carrying off the infection children may suffer severely. When infection enters the body there is a reaction, the body tries to get rid of it, to destroy it. In reality it is a battle between host and invader, just like the battle between those in the fort and the enemy, one or the other will prevail. In a general way it may be said that if the body is placed under good conditions it will throw off infection. Sickness that keeps a child at home from school may really be a conservative process; it enables the body to get rid of infection, assuming that the air of the home is better than that of the school room.

This struggle is an important one and determines whether a child will live or not, and yet it is generally misunderstood. already mentioned, when a child is not feeling well physically or mentally, it is only too often ascribed to "overwork," that is the child is "studying too hard." while as a matter of fact the overwork is on the part of the body in trying to get rid of infection. Perhaps the value of open air schools can be understood in the light of these remarks. Children under good air conditions do not readily break down; they can do a large amount of studying. I frequently see high school students on the point of "breaking down" under bad air conditions and barely able to pull through, but they may be able to do an immense amount of work while going to college or a university where attention is given to air conditions. If such a student after graduating from the high school becomes a teacher in a small country school where air conditions are good, there probably is good health; if he teaches in an unsanitary school, in town or city, he may and usually does break down.

Today there is a demand for "robust" school teachers, those who are sickly or complain are not wanted. Now in times past the farmer boy or girl whom the parents thought "delicate" would be sent to school and given an education that would qualify him to teach. The same of course is true of many a city child: parents have an idea that delicate children should have an indoor occupation. But teachers drawn from such a class of "delicate people" are apt to react under bad air conditions found in schools with poor ventilation and not kept clean. On account of this there were so many teachers who were always complaining that now there is a demand for robust, non-complaining ones. Instead of cleaning up and ventilating freely and making air conditions suitable for people who are apt to complain on account of bad air, we adopt an opposite course, we rule out those who react, those who complain. The teacher who in reality is a living barometer is not wanted.

But the robust teacher like the robust doctor wholly misunderstands the problem of ventilation, of good air, in school rooms. To be sure the sickly teacher may also fail to understand the why and the wherefore. Some come from homes where the old idea of the injuriousness of draughts and open windows still prevails. Instead of admitting fresh air they close up everything, thereby aggravating their ills. What the teacher needs is education! Is it necessary to add that the intelligent teacher who has always complained about ill health readily adopts good air advice? Shall we go a step further and say that many physicians come from homes where similar ideas regarding draughts and open windows prevail and that if they are taught nothing about the importance of good air, neither in school nor in medical college, they may wholly fail to understand the present pure air movement?

The common ill health and common ailments of school children will be taken up separately.

This is not the place to discuss bacteriology, that is a vast subject. It has become so important that colleges teach it and indeed some high schools even have elementary courses to instill definite ideas. The causes of many diseases can be cultivated in glass tubes

on proper "culture media," just as large species of plants can be grown in the garden. Readers interested in the subject can likely obtain a volume or the information through their public library.

It is not my intention to consider a large number of causes of ill health, but I should like to refer briefly to a few in addition to those already mentioned.

"It's the noise," I have had several patients tell me. They had an idea that the noises of the city made them ill. One farmer told me he had noticed that every time he comes to town he gets ill, he feels bad even if he goes to a country church, or wherever people are massed together and there is a buzzing of voices. Farmers on moving to town may have continued ill health, ascribing it to noises; similarly people who remove from the suburbs to the heart of the city. When one critically studies such individuals one finds that it is not so much what goes into the ear as what goes into the nose and mouth that makes them ill.

Noise, smoke, and dust are of course intimately bound up. The noisy city is also apt to be a smoky and dusty one. In the large city a physician may have difficulty in separating noise and dust and other influences. The isolated country doctor finds it less difficult to discriminate, in fact he may have unusual opportunities.

When a country doctor meets a case of smallpox or scarlet fever or measles he most likely at once inquires, Where did you get it? The patient living on the isolated farm must of course have "caught" the disease somewhere. Exceptionally it may have been brought in by a letter or on clothing or things that come from town or from neighbors, but more commonly the individual came in contact with some on who had the same disease. We all know how some diseases are regarded as very "catching" and how efforts are made to isolate those who are sick and how houses are placarded. Now while the country doctor may have little difficulty in tracing the exposure, the city doctor may utterly fail, because his patients are constantly coming in contact with countless others.

The country man who goes to the city not only encounters noises but also other factors that produce ill health, notably bad air. He may refuse to drink water and escape water-borne diseases; he may refuse to eat in the city and thus avoid food-borne diseases, but he can not avoid breathing.

The matter of influence of noise vs. bad air is an interesting one and even people who have no medical education can make observations that are of value. As a matter of fact, many observations regarding dust influences are of a nature that do not require a medical education, just plain common sense. In making such a statement one feels impelled at the same time to criticise our schools for their failure to teach children to observe things; there is too much memorizing from books.

"It's unhealthy towns and homes that make one sick," some say. There is of course much truth in such or similar statements but one must inquire why, in what way do home and town conditions differ? Why are some towns unhealthy or unsanitary and others not? Do the people get the essentials of a healthy life: proper housing, proper rest and recreation, pure water, pure food pure air? These are questions one must ask. To what extent is there overcrowding and a mere struggle for existence?

Many towns and most cities for a long time have given attention to the securing of good water and they have laws and ordinances regarding food, but so far practically no attention has been paid to the matter of pure air, and this is one of the great causes of common ill health, how great we are only beginning to find out.

How do we get our ideas regarding comparative salubrity or healthfulness of cities and towns? Primarily through mortality statistics. We are told how many people died, what percentage of the population, and of what diseases. But such ideas may be very erroneous because mortality statistics concern themselves only with deaths, with people who died; they take no account of people in ill health. A man may have years of ill health before he dies; we hear only of the cause of his death and his age. A strong country boy goes to the city, he soon becomes ill and returns to his country home, to die; his death is accredited to the country and not to the city where it rightfully belongs. We constantly find people once

strong drifting back to the country, to the scenes of their child-hood. Probably the best method of judging the comparative salubrity (or morbidity as opposed to mortality) of communities is by the ratio of physicians and druggists and the number and size of patent medicine advertisements, not forgetting a city's water supply and the condition of its streets. Good water and clean streets mean healthy people.

A young physician is apt to get all sorts of advice from his friends where to locate. He may be told to locate in a certain community, because there are few physicians and there is little competition. But every experienced physician knows that a community with many physicians offers better opportunities for the young man. Many doctors means much "doctoring." There is much sickness, i. e., ill health due to unsanitary surroundings and reactions due to an abnormal environment (really incurable but largely, if not wholly, preventable). The sick are constantly drifting around ready to try "the new doctor in town." An unsanitary city contains any amount of ill health that is not curable through the use of medicine but which is curable or certainly reduceable to a minimum by attention to things other than the taking of medicine. One of the widely read popular medical journals has a slogan, Clean Up, Clean Out, and Keep Clean. If the people only knew what that implies! In short, cleanliness is next to godliness.

Much illness is dependent on overcrowding. Leaving the crowded city may mean a return of health. City life may mean bad water and bad food and especially bad air. When a man goes to the country and eats "good country grub" he likely also gets good water and good air, and that may mean a return of health. If there has been no serious injury to the body on account of inflammations and scars there may be a relatively complete restoration of health; but we all know that many wait too long before making a change, a change may no longer bring the expected improvement. Poor people are often unable to make a change; they will continue to work as long as possible, until they break down. Formerly when land was plentiful a man could go out and

take up a quarter section but those days are past. Many towns have unhealthy trades and occupations and as long as men follow them they will have ill health.

The fact that much of the common ill health and failure of people in the city is due to congested population, with all that this implies, is evidenced by the formation of societies that colonize people in the country, virtually giving a man a new chance to maintain an independent existence. Cities of today have greatly improved over those of a hundred years ago but much is still to be desired.

The physician meets people often who are constantly moving about. They move from one house to another, from one street to another, and from one town to another and perhaps from one State to another. In studying a number of these individuals I found that moving was often really a search for better health. To a number of these individuals I have been able to point out that the chief factor in their ill health was bad air conditions.

Occasionally one meets people who say, "It is my occupation that is killing me." They are confident that if they had a different occupation, especially an outdoor one, they would have better health. Often they speak positively because they have tried it. Many have made changes and then again gone back to the old occupation. The physician may be able to point out to them the reason why, that many occupations are carried on in an "indoor climate," under artificial air conditions. We are just beginning to realize that it pays to have good air in factories.

I have case histories of men who moved about and tried all sorts of occupations after leaving school. They tried this and they tried that; at times they felt better and then again worse. Yet it is the exceptional individual who has any idea that air conditions are at the bottom of it. Many a country boy on beginning city life has among his duties the sweeping of a store or office. Having always been accustomed to good air, he may promptly react to bad air, air full of infection. He may try all sorts of occupations and finally drift back to the farm without ever fully realizing why he could not live with comfort in the city. In many

factories there is dust that is very injurious. It is the exceptional individual who can tolerate it. Many occupational diseases so-called are due to dust conditions. This is a subject to which sanitarians are giving a good deal of attention.

When we study a large number of people we are apt to find that they fall into two groups, those whose ancestors have always lived under rural conditions, country people as we say, and those whose ancestors have perhaps for generations been living under city conditions. Now old time city conditions were very bad and there was a very active weeding out of those who were not adapted. This is markedly shown by the Jews. In old European cities they were confined to ghettoes with gates locked at night, the overcrowding was fearful; many perished under such conditions. The descendants of those who survived are able to thrive under present city conditions. On the other hand there are Jews who have been living under rural conditions, especially Russian Jews, who are now crowding into our cities; many of these fail quickly. The weeding out now goes on among these as it did among the ancestors of the others.

We see this weeding out process again among the descendants of the southern mountaineers. When people for several generations have been living under very primitive conditions practically all have a chance to grow to maturity and reproduce their kind. When these mountaineers or their descendants crowd into cities many promptly fail, the "weak" are constantly killed off.

A middle-aged woman from an adjoining town came to me several years ago with a history of chronic ill health. She had the peculiar faded appearance which at once led me to suspect she was of southern mountaineer stock, and so I promptly asked regarding her family history. My suspicions were confirmed. Her ancestors were mountaineer people who came to this State when she was a small girl; they settled on an isolated farm. From the time she became of school age and went to school she complained of ill health. After school days there was better health and then she married a small town storekeeper. Ill health now reappeared, marked by colds and catarrh, headache and dyspepsia, and a "good

for nothing feeling generally." She had an idea that the town was unhealthy and induced her husband to sell out and move to another. In fact, there were repeated moves and her husband became a "ne'er do well." I tried to explain why she was not adapted to town life.

When the woman understood she spoke of her only child, a daughter now almost grown, who was following in her footsteps, had similar ill health. Her ancestors had raised large families; she had only the one child. Perhaps such cases explain the extinction of families.

About the second or third consultation she came in accompanied by her husband, a stout full blooded man who did not give her any sympathy and believed her ills were imaginary. Moreover he was quite bitter against the medical profession because he had spent thousands of dollars "all for nothing." A woman with such ill health and under such circumstances is to be pitied.

Another common explanation is that of inheritance. People feeling ill may say they know they have, or are going to die of, a certain disease, because some other member of the family has or had it. On the other hand some say they know they do not have such and such a disease "because nobody in the family ever had it." When people feel bad or have chronic ill health they attempt to account for it by the presence of some disease or being perhaps in an "early stage." Many physicians do the same. As a general rule however specific diseases are of comparative short duration. The "terminal disease," the one that ends life, may kill quickly and perhaps have no relationship whatever to the preceding years of ill health.

One of the great questions discussed by scientists today is the relative influence of heredity and environment. The subject is complex. Many factors must be considered. To the physician the question is important from the fact that he must distinguish between well defined diseases, minor maladies, and common ill health. In the case of many diseases there is developed a mutual adaptation, but many individuals not feeling well are not diseased.

To what extent is their ill health due to inheritance, to what extent due to the influence of environment?

I have a little story which I tell those who are so positive about the matter of inheritance, who say that certain disease or diseases are present or absent in their families, in substance: An Indian and a white man applied for life insurance. The Indian gave a "good family history;" there was no consumption, no cancer, no Bright's disease, etc., in his family; he was promptly accepted. The white man had to admit that in the past some members of his family had died of one or another of these diseases, in other words, his "family history was bad;" he was rejected. A year later the Indian was dead; he and his ancestors had never been exposed to the "diseases of civilization," diseases which had ravaged among the white man's ancestors and killed off the susceptible. The white man, in spite of his "bad family history," lived on and on.

Often people who have much ill health express the belief that they will not live long, confusing ill health with disease that kills. To such I quote the old English saying, In order to live long, acquire an incurable disease, explaining that really there is no disease at all, only ill health, and that the symptoms are to be considered in the light of warnings from nature not to go to extremes. As a rule the old chronic is prudent; his pains and aches tell him how far he can go and when to desist, and because he is careful he lives on and on.

Years ago I read about a titled Englishman, the last of his line, all his ancestors died in early manhood. If there was anything in heredity he knew his own fate. On the other hand, if there is anything in the influence of environment and watching oneself he was determined to prolong his life. To do this he studied medicine and became his own patient. As a doctor of medicine he of course felt free to consult his fellow-physicians and get their best advice. He studied his own case and watched himself. He regarded pains and aches as warnings, to be heeded and their causes to be avoided. He died of old age. Whether the story was true of course I do not know, but it is a good story to tell pessimistic patients. Care and prudence pay.

On considering cases one has actually studied, a physician might arrive at the conclusion that for the average individual the influence of environment is the greater factor. This is fortunate because we can largely alter our environment, make an unfavorable one favorable, or remove from an unfavorable one, while we have practically no control over the influence of heredity. It should be kept in mind that in this volume we are considering people of European descent. If the Eskimo and the South Sea Islander were to change habitats each would likely promptly perish, but how much to ascribe to environment and how much to heredity and the weeding-out factor would be impossible to determine. We of the temperate zone are exposed half the year to winter and half to summer; we can bear exposures that those of the arctic and torrid zones can not. Need it be added that well-to-do people who are delicate or susceptible, who can not bear the heat of summer, can go north, or those who can not bear the rigors of our winter go south?

People whose ancestors have lived under city conditions are likely to bear unsanitary conditions to which the descendants of people who have always lived in the country would promptly succumb. Some people are able to live in the worst slums, but the "survival of the fittest" may not at all mean the survival of the best.

People have all sorts of explanations regarding their ill health and its causes. Among them are explanations obtained from practitioners of medicine. But often such explanations are very simple: "It's the stomach," "It's the liver," "It's dyspepsia," "It's uric acid," etc. People of course want an explanation when they are not feeling well and if they can not explain to their own satisfaction, then some one must explain for them—and usually the busy doctor gives an explanation that he thinks his patient can understand. He has no time for lengthy discussions, and so he uses common explanations, such as the above. (For a longer list see the advertisements and testimonials of patent medicines in the newspapers,)

At times the name of some definite disease may be given. An individual may be told he has tuberculosis, or "threatened with consumption." Exceptionally an individual may be told he has cancer (chronic dyspeptics often have a fear of cancer of the stomach). Another may be told he has Bright's disease. As a rule however practitioners of medicine avoid "diagnoses," that is explanations, of this kind because if people "get scared" they may go to some other physician or to a specialist. Merely to say, "It's the stomach," "It's dyspepsia," is rather non-committal and is more apt to lead the patient to believe he is going to be cured than if he is given the diagnosis of cancer, or consumption or Bright's disease. A good doctor promises no cure, only to do his best. The poor doctor readily promises; ignorant people want a man who promises to cure.

In case of an acute attack, perhaps only a cold, the patient may be told he is "threatened with pneumonia" or some other disease, but the threat does not materialize. What was really the matter and what was the cause of the attack? One wonders, especially in cases where the individual in a day or two is out on the street again.

One of my old patients told me she had four or five attacks of diphtheria in so many years. She had a "sore throat" the first winter she was my patient; cautioned about the influence of bad air she had no other attack for several years. (She was a dust victim.)

There are various reasons why people get such explanations or diagnoses, which however are not real diagnoses. For one thing people are not willing to have the physician investigate properly and make explanations that explain. People are usually willing to pay for medicine but not for advice and where competition among practitioners is keen a doctor can not afford to make lengthy explanations. Then there are practitioners who are too lazy to investigate. A patient may drift around until he reaches a man who does investigate and finds and makes the right explanation, one that is fully verified in the course of time, and then such individuals are taken out of the drifting-about class. Then too there are practitioners who are not above scaring people in order to get them

to take treatment. They usually are of the busy kind, so "busy" that they have no time to belong to a good medical society, or if they nominally belong, never take part in discussions.

Old chronics who have "made the rounds" of course have met all sorts of doctors and when one questions them one gets all sorts of information regarding the practices of "medicine men," regular and irregular, licensed and unlicensed, including the "fly-bynight" who comes to town and announces his wonderful accomplishments in the newspapers but in a short time disappears, and also the quack who diagnoses and prescribes by mail, and the druggist who prescribes over the counter, and the faith healer who gives "absent treatment."

The subject of "newspaper medicine" is an interesting one. Under this term is understood the alliance of the newspapers with "medicine men" who may not at all be physicians or who are not in contact with the regular profession. Patent medicine men may not be doctors at all; they are usually shrewd business men. Quacks and charlatans may have medical degrees, even a license, but they are pariahs not recognized by the profession. To all these the newspapers are important. In other words, the newspapers help these "medicine men" to humbug the people. I shall have something to say about these further on.

As already mentioned, everybody has an explanation or wants one. Some explanations are simple, others complex. Doctors themselves have explanations for use in speaking with their patients, but perhaps a wholly different one in discussion among themselves, or when about to sign a death certificate. There are some diseases from which respectable people do not die—only poor people or those without friends or relatives. Again, some explanations of ill health may be considered "fashionable," but when too freely used lose cast. The diagnosis of "neurasthenia," for instance, was a fashionable one until too many poor people also had it. "Neurasthenia" has many synonyms; one may be applied more appropriately than another.

Another explanation in vogue a decade or two ago was "uric acid in the blood." This explanation was widely used by physi-

cians but has now been practically abandoned. It still lives on among the people, kept up through the advertisements of patent medicine men, with some of whom uric acid in the blood is the foundation for practically all the common ills.

The explanations of physicians differ from those of the laity in that they are based on a larger number of cases. A sick man may know of very few cases. The theories of scientists are also explanations. If a theory explains many facts and can be used in predicting it may form a "working theory," to be used until a better explanation is found. Each change likely means a nearer approach to the truth. Perhaps it should be added that some theories or explanations are wholly devoid of any connection with dollars and cents—but old medical theories may still be used on account of their financial importance. The "uric acid theory" is still of financial use to patent medicine men.

More recently another explanation for much of the common ill health has come into use, the theory of auto-intoxication, and here too the patent medicine men are catching on.

Occasionally the physician meets individuals who state their symptoms and assume that some disease is present but say, I don't know what it is. Often such persons have made the rounds of the doctors and have had all sorts of opinions and finally they come to believe in none, and being unable to arrive at any conclusions from their own observations, they naturally say, "I do not know what it is." They may not want any more opinions; they want to be cured or have symptoms reduced to a minimum. Some physicians like to get hold of such individuals and "work out the case" as they would any other problem.

Now those in ill health soon discover that doctors differ greatly, that they are interested in some kinds of cases and some people but not in others. A specialist is interested only in a certain kind of cases, he may wholly refuse to take an interest in others. The general practitioner is supposed not only to be interested in every

Bome of my patients, especially old ones who have been with me for a long time, speak of the subject as discussed in this volume as the "dust theory." They are firmly convinced of its truth. The reader must himself determine to what extent it is a "working theory."

case, in every individual who applies to him, but to know just how to treat the almost innumerable kinds of diseases, maladies, disorders and states of ill health. Does he? By no means. The "interesting case" of one physician or surgeon or specialist may be of no interest to another; if he gives any attention at all it may be purely of a routine kind. He may not make a proper study of the case according to the present state of medical science.

Our age has been characterized as a mercenary one, that a man will do nothing unless "there is money in it for me," and physicians have not escaped the accusation. In olden times physicians depended on an honorarium; they left the matter of pay to their patients. The medical profession has always been a poorly paid one. Unlike lawyers, physicians do not ask for a contingent fee and only too often there is no clear understanding of what they are to get in return for services. In Europe and in all countries where people are not much given to moving about, people learn to know to what extent to depend upon one another, the physician may be willing to give unlimited credit. But in our country where people are constantly on the move unlimited credit is not feasible. The telephone company collects in advance. The grocer wants prompt pay. The newspapers send out their collectors at the end of the month. Even physicians have found it imperative to look after prompt collections. Just as the grocer will not trust and the newspaper will not trust, so many physicians will not trust. If a man has nothing to give in return he is probably given scant attention. A physician may be so overloaded with poor patients that he can not make a decent living—and yet the stranger in acute distress will likely receive attention without question, "according to the traditions of the profession."

Medicine is an evolution. Fortunately (or shall we say unfortunately?) there is no tradition regarding what the "laboratory doctor" should do in the case of applicants, especially where the applicant is an old chronic and where there is no emergency. The student of chronic ill health may make all sorts of inquiries, including what he is to get in return for his services, before he accepts a new patient.

If the good physicians were less backward and the poor ones, especially the advertising quacks, were less forward in speaking about fees, and if people clearly understood that the laborer is worthy of his hire, there would soon be a change.

What many of those in chronic ill health and especially poor people need is good advice. Many ills are not curable by the taking of a "little medicine." But good advice means investigation and that means to take up a lot of time and time must be paid for. The physician who practices medicine purely from the humanitarian standpoint is an exceptional individual; few can afford to do it.

If the old chronics are neglected by the physician, if they get only routine attention, "a lick and a promise," what do they do? For one thing they buy patent medicines. Having tried all doctors and all the advertised nostrums and finding themselves still uncured, they are ready to try everything else, even faith and mind cures.

Now according to my experience (and I have given the subject of chronic ill health much attention) many individuals who are complaining are not really "diseased," they are merely reacting to an unsanitary environment, one to which they are not adapted. Much of the prevalent ill health in reality is due to the "influence of environment," it is a reaction to unsanitary conditions. Such ill health is not curable by the taking of drugs nor any outlandish mode of treatment. Change of environment or change in habits may be the cure, that is, cause symptoms to disappear. Symptoms like everything else have a cause; by removing the cause they disappear. Symptoms are to be regarded as warnings; they are to be heeded. There is something wrong. The automobilist when he hears any peculiar noise about his machine knows there is something wrong. Pains and aches are nature's way of letting us know something is wrong with the human machine. The doctor who tells a patient to neglect symptoms and tells him not to worry is not apt to be a student of common ill health, and the people soon discover it.

There is a vast difference in attempting to explain a man's ill health (symptoms of ill health) in the light of postmortem pathology or in the light of the "pathology of the living," between

attempting to trace ill health to the presence of some well-defined disease or to the influence of an unsanitary environment. Some explanations do not appeal to patients, the explanation may be the correct one or not. Although it may take much time to investigate, it may take more time to make proper explanations so that the patient will understand. Some cases the physician can readily explain, that is to his own satisfaction, he may have seen many cases of the same kind; but at times it is a problem how to make explanations that make the subject clear to the patient. Other things being equal, the patient who most fully comprehends will likely most fully co-operate.

Old chronics as a rule have had all sorts of advice; they may have been to specialists who insist on the importance of one thing or another, but according to my experience the man who has been advised regarding a neglected factor, bad air, is very exceptional.

The subject of ill health, especially chronic ill health, can be studied from different standpoints. Here I shall pursue it (as may have been suspected from the tone of this introductory) from the standpoint of air conditions. Man eats about three times a day; he drinks perhaps five times a day on the average, but he breathes fifteen to eighteen times a minute. He can do without food many days; he can do without drink for several days, but he can do without breathing for only a few minutes. A farmer or a suburbanite can go to the city without eating or drinking but he can not do without breathing. He can avoid sickness and ill health due to food or drink, but he may be wholly unable to avoid ill health due to breathing bad air. If he knows what bad air is and chooses to remain away from it, he may escape. In this work I purpose to point out what is meant by good and bad air and the kind of ill health that may be caused by it.

After a physician has given a subject attention for years and has seen hundreds of cases and had innumerable discussions with patients on all sorts of topics relating to common ill health and more particularly on ill health traceable to air conditions, it becomes a problem what to include and what to exclude from a book

for the general reader. Of necessity one must confine himself to more or less general statements, unusual or rare cases can not be cited at all, neither can one go into details that may be of interest culy to the few. The subject is really a vast one and some things can not be taken up at all, some only very briefly. It is hoped enough is given to enable the intelligent reader to arrive at some conclusions.

It may be proper here to say that those who have never given the subject of dust influences and dust infection any attention may view this subject with alarm. They may think we are threatened with a new peril. Every now and then we see accounts by some alarmist of some "chief peril" that threatens destruction to the nation—and yet the world lives on.

When the germ theory was first advanced timid people saw germs everywhere; they became fearful. In time they learned that only certain kinds are injurious and that their destructive influences are limited. We have learned where to expect them and to know where they are not apt to occur. The same may be said of dust. Only certain kinds of dust are injurious and when we learn where these occur and where not we may find there is no need to be alarmed. Prudent people know that to be forewarned is to be forearmed; they also know that there are those who are heedless and as a consequence suffer.

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LOCAL CONDITIONS AND CHANGES IN TIME.1

(Mesology and Ecology.)

Changes in my own State have been discussed with many patients, particularly with old people, early settlers.² The present generation, especially people living under city conditions, has little idea of the early conditions under which people live and of the changes that have taken place since clearing the forests and draining the wet lands and building towns and cities. To understand present complex conditions we must study earlier simpler conditions.

Indiana like surrounding states lies in the north temperate zone and has an annual variation of temperature of approximately 125 degrees, from 25 below zero to 100 above. On account of the fairly equal distribution of rainfall (about 40 inches a year) there is an abundant supply of water for man and beast and plants. When the white man first came to what is now Indiana, dense forests covered the country except parts of the northern level marsh and prairie land. In a general way it may be said that the southern third of our State is hilly, the central slightly rolling, while the northern third is flat and wet, but recently modified greatly by drainage.

NATIVES. Our State when the white man first came in was in possession of the American Indians. They were still in the hunting and fishing stage of civilization. They were a "strong and healthy race," mainly on account of their simple life and because not exposed to the active causes of diseases; they lived in isolation.

¹ The original title of this chapter was CHANGES IN INDIANA, but manuscript critics objected, saying that that would give the reader the impression that the volume was local, that the conditions described existed only in Indiana, while in reality similar changes occur in surrounding States and in fact all over the United States.

Here I am merely writing about things I know and have discussed with patients. The French have a saying, He may lie boldly who comes from afar. The reader in a distant country may regard some of my descriptions as imaginary but my patients know they are true. To what extent descriptions and conditions apply to other localities the reader must determine for himself.

² I have already referred to an old farmer and his ideas on the changes in diseases and climate.

EARLY IMMIGRANTS. These were French hunters and trappers, roaming over the country. They were soon followed by people of English descent. The history of the white man in this State goes back a little over two hundred years.

Early Settlers. The first "foreigners" who came to make this State their home were the French, settling along the lower Wabash river. They settled in communities, thus differing from people of other European countries, especially the British who took to the open country. The latter came in two main streams, one from the south, composed mainly of descendants of southern mountaineers, the other from the east, mainly descendants of Atlantic colonists. In time people came here direct from Europe.

An interesting study is that of motives that prompt people to leave their ancestral homes and seek out a new home in the wilderness. The early English immigrants to this country seem to have left their old homes mainly on account of religious restrictions. They wanted to worship in their own way—and yet as soon as they attained their end they tried to force others to do as they did; they became more oppressive than their own oppressors. For this reason again many early settlers in the New England States went still further west.

"NATIVES." The term "natives" is frequently heard, especially by the descendants of the early comers in contrasting themselves with recent arrivals—but at the rate they are dying off or rather not propagating themselves they will soon be extinct, especially under unsanitary city conditions. Then we must consider the fact that this "native" blood is constantly being diluted by intermarriage with "foreigners," with new arrivals.

OTHER NATIONALITIES. Immigrants from other countries, from Germany, Ireland, Sweden, from Italy, etc., began to come early but only recently in large numbers, comparatively speaking. In proportion as immigration from northern European countries diminished, that from the southern countries increased. The motive that impels most new comers seems to be easier life conditions existing here, escaping overcrowded European conditions. But

since practically all public land is now taken up many of these come to our cities only to lead a mere struggle for existence.

OTHER RACES. The white man was followed by other races. First came negroes, brought in as slaves. In recent years Chinese and Japanese have come in. But our State at present is essentially peopled by the descendants of immigrants from Great Britain and Germany, with a fair sprinkling of other nationalities.

The first white men coming to our State were hardy specimens. The weak and decrepit were left behind or perished on the long overland journey. The first settlers brought in few goods, simple household utensils, a few domestic animals and seed of various plants. Life at first was very simple, especially as long as game lasted. A small truck patch supplied the table.

ANOTHER KIND OF IMMIGRANT. In time all kinds of "immigrants" came, the Old World pests and parasites. The European rat came in early. European weeds of all kinds came in gradually and compelled the settler or farmer to war against them. These weeds have for years resisted destruction at the hands of man and have developed staying qualities. They rapidly erowd out native plants and if not kept down also crowd out cultivated plants, just as the white man crowds out the native Indians.

Besides a host of animal parasites varying from quadrupeds down to insects that attack crops, there have come in a variety of rusts and blights that attack the farmer's grains and trees. Just as in the case of new weeds, rusts and blights² are constantly coming in, often producing serious damage.

¹ Several years ago on a tour through the Yellowstone National Park I was surprised to find an almost complete absence of our common weeds, weeds that originally came from Europe. Only a short time ago a friend told me of a man here on a visit from the Saskatchewan who gave a glowing account of the large crops raised and the immense size of potatoes, cabbages and turnips. He ascribed it to the climate, while as a matter of fact it was due to the virgin soil and the absence of common weeds which had not yet come in and warred with cultivated plants for possession of the soil.

² Our State Agricultural College is studying this subject. A friend periodically sends me a blank to fill out regarding the ravages of rusts and blights in the county but unfortunately I know so little about such things that I can be of little service. If I did report without knowing the real facts I might be misleading those who are supposed to know; hence I prefer not to report at all. But I am ready and willing to gather and send material, specimens, that will enable those who do know how to determine the facts in the case.

OTHER PARASITES. As already mentioned the native Indians were strong and healthy. The first immigrants were also a hardy race, they left their diseased and diseases behind. Now every student of nature knows that human beings are afflicted by various parasites, just as animals and plants are, and that it is only a matter of time until many come to a community where they had never been seen before. Many diseases of man are due to the presence of parasites, both animal and vegetable. The first appearance of many of these parasites, and that means the resulting diseases, is known; there is a record in the books or journals. Some parasites are large enough to be seen by the unaided eye; others are so minute that they must be highly magnified. The active causes of such diseases as typhoid fever, cholera, tuberculosis, malaria, are very minute, but they make up in number what they lack in size; they may simply overpower the body; then we say the disease killed.

Some of the now common diseases came in early. There is for instance a history of smallpox brought in by the French and killing off many Indians. The Indians never having had such a disease proved very susceptible and died off in great numbers. Similarly when tuberculosis, or consumption, was brought in to them they died off at a great rate. Unfortunately there are few records of the appearance of many of the common diseases in our State and there are no records of the sort of specific diseases the Indians had before the time of the white man's first coming among them.

DISEASES AND THEIR CAUSES. There are all sorts of diseases as there are all kinds of causes, native and foreign, internal and external. It may be said that a disease is a reaction of the body toward a cause and that the reaction depends upon the kind of cause. Some causes produce a mere disturbance or malaise, others ill health, still others produce a reaction so severe that it kills quickly. Many of the active causes of disease when growing in the body produce poisons and these poisons act upon the body; this reaction is termed specific disease.

Many substances when they gain entrance into the system bring

on a reaction that is characteristic. Thus when lead gets into the body there results lead poisoning or plumbism, a disease that occurs especially among lead workers and painters. Now we are reasonably safe in asserting that before the advent of the white man the Indian knew nothing about lead and he was free from lead poisoning, just as he was free from morphinism and alcoholism, and in all probability he likewise escaped poisoning by the activity of the typhoid bacillus and the tubercle bacillus; they had not yet been introduced.

One need scarcely go into a discussion of the active causes of diseases to which the Indian was subject. They were relatively few. Among native causes one is apt to think of the pollen of Rag weed or Goldenrod; one wonders whether the Indians had "hayfever." But at least one "native disease" should be mentioned, namely, milk sickness; this severely attacked the first settlers, killing many; it has now practically disappeared. Whether malaria existed among the Indians before the white man came is very doubtful. It seems to have come in some time after the white man and soon became a serious and fatal disease. But in time as the State settled up and wet lands were drained it became less and less common until now it is a comparatively rare disease. (The term malarial so frequently used at the present time as a rule has nothing whatever to do with malarial fever. Recently it has been proposed to rename malaria Anophelesis, because it is transmitted through the bite of the Anopheles mosquito.)

OCCUPATION, ILL HEALTH, DISEASE. There is a close relationship between the occupation of an individual and the amount and kind of his ill health and disease. The native Indians were hunters and fishers and moved about constantly; they led an active out-of-door life; they had pure water, pure food and pure air and came little in contact with diseased people and hence were "healthy." We should keep clearly in mind that "healthy" under such conditions is the result of not coming in contact with the causes of ill health and disease.

¹ The Indians of today can no longer be regarded as "primitive people," for they have been exposed to all kinds of introduced diseases and there is more or less "mixed blood" among them.

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The first white men, as already mentioned, were also hunters and trappers, leading a simple life after the manner of the Indian. They had no fixed homes. They likewise were "healthy," or, as we commonly say, hardy. The settlers, in distinction to the hunters and trappers, were accompanied by their wives and children; they established homes and that means more or less exchanged an outdoor life for an indoor one. This means that the sick were housed up and kept alive as long as possible, and it means too that the healthy constantly came in contact with the sick and with the causes of sickness and disease. Many diseases keep themselves alive, so to speak, by wandering from one individual to another, and in proportion as the healthy are exposed to the sick the opportunities for such propagation are favorable. The Indian with no fixed home neglected his sick and they quickly perished, just as the sick of the white man perished on the long march to the new home. Some diseases may be regarded as house diseases, notably tuberculosis; they do not thrive among open air people.

The susceptibility to ill health and disease varies greatly, as we all know. Some succumb readily, others are highly resistent. This depends partly on a more or less close contact with the sick and partly on the ancestral history. When the ancestors had for ages been exposed to a disease the very susceptible were constantly killed off, the survivors being more or less resistent. One might say there is more or less adaptation toward the disease and the people among whom the disease lives. If a disease is so severe that it kills off all the people of a region then the disease itself perishes for want of material. If on the other hand it is not strong enough to attack some of the people then it also perishes or disappears. If the descendants of highly resistent people go to an isolated region where they are not constantly exposed to the ravages of disease they reach maturity and leave offspring that in time becomes susceptible, that is on coming in contact with diseases. There is no weeding out until the individuals come in contact with diseases that cause a weeding out. This explains why the descendants of southern mountaineers are so susceptible to many of our common diseases on leaving their mountain or good

air homes. The usual but erroneous explanation is that they "lack stamina;" as a matter of fact they have not been exposed to disease and there has been no weeding out. To exchange an out-of-door life for an indoor one or exchange an isolated country life for a complex city one means that many will be weeded out.

This weeding-out process occurs everywhere, even among plants. Every now and then some blight or rust gets among cultivated plants and destroys them. Perhaps a few out of a large field survive and the plant breeder by saving the seed of these in time produces a "disease proof," i. e., rust or blight proof, variety to take the place of the other, the susceptible kind. Thus we have the present "rust proof oats" and many disease and rust and blight proof fruits and vegetables. The naturalist would say they are the survival of the fittest. There is increasing difficulty in raising many plants on account of the appearance of all kinds of plant diseases.

Many if not most domesticated plants and animals would quickly perish if left to nature; they are not adapted. Chickens and geese unable to fly would fall a prey to their enemies, especially to the fox. A cow without powerful horns would fall a prey to the wolf. The seed of plants such as corn and melons would not "winter over." It is man who makes the conditions for their existence possible, just as he makes conditions for his own existence favorable. To neglect sanitation in large cities would mean that the inhabitants would die off in vast numbers from epidemic diseases; we need only keep in mind how Asiatic cholera and the Bubonic plague are kept out of the country or kept under control.

OCCUPATIONS AND MEETING PLACES. It would be interesting to follow up the different occupations taken up in our State in the course of time, beginning with that of hunting and trapping and followed by farming. Perhaps the first differentiation, that is the first sedentary occupation, was that of store-keeper, the man who supplied the simple wants of the settlers, taking in return the produce of woods and fields. From the standpoint of the evolution of diseases, one may say that the store is an important factor

because it formed a meeting place for all sorts of individuals. On long winter evenings the men crowded about the stove to exchange stories, at the same time smoking and chewing and spitting. Under such conditions the germs of disease are readily transmitted from one to another.

The preacher too came in early and churches were built, and that means that another place for the propagation and exchange of diseases was established; the sick and the healthy met. One may say that in proportion as there was poor ventilation the chances of transmitting diseases were increased. Some churches are not opened from one Sunday to another.

Trades came in gradually. The blacksmith early set up his forge in the new settlement. "The butcher, the baker, the candle-stick maker" all followed in time, as the country grew. The advent of steam led to the formation of industrial communities, of factory towns, with men confined indoors, often under very bad sanitary surroundings all day long. Some parents have an idea that their weak or delicate children should take up some indoor occupation, that they are not strong enough to be "exposed;" what they may really require is an outdoor occupation.

Schools are places where children congregate. They came in early. Here we have the great agency for the spread of diseases among children, the children from the homes of the well or healthy coming in contact with the sick and diseased. Even today the annual fall opening of the schools is followed by a great increase, often an epidemic, of certain diseases. Children may take infection home to their parents.

Every county has its court house and this again is a meeting place for the people of a large area. The poor ventilation and unsanitary condition of many court houses are notorious. One can readily see how a court house may form a focus for the dissemination of diseases among country people. When a small community reaches the size of a town it likely has its opera house. Today in addition there are one or more five cent theaters, often very poorly ventilated, regular incubators for ill health and disease, as many have discovered and with the discovery remain away.

DISEASE AND ILL HEALTH. Disease like every other phenomenon in this world has a cause. In the absence of the cause the reaction, that is, the disease, is absent. For instance, there can be no alcoholism in the absence of alcohol; there is no typhoid fever in the absence of the bacillus typhosus. Often the relationship is not so simple, as in the case of malaria, which on the one hand requires the presence of the active cause (a plasmodium) and on the other the presence of the transmitting agent (a certain kind of mosquito, genus Anopheles) which carries the disease from one to another.

Ill health scarcely reaching a condition or stage of severity where it can be dignified by the name of disease is largely due to environmental influences, that is, the place where we live or the conditions under which we live. (The coming in contact with the sick, using bad food, bad water, bad air, living under depressing conditions, etc., all are factors.) Ill health and disease of course shade off; there may be no sharp dividing line.

The word disease is in the mouth of everybody. We all have some idea what it means. Physicians know and many sick know that there may be ill health and yet no well-defined disease, just as there may be well-defined disease, especially in its early stages, and yet on account of the absence of symptoms the individual may not be aware of it, symptoms may appear later. One may argue, "If there are no symptoms there is no disease."

The body reacts to all sorts of causes, material and immaterial. We may feel bad on account of bad news, worry, or fright, just as we may feel bad by using improper food and drink. Food may undergo a change with the production of poisons (as ptomaines), and the reaction may be a poisoning, perhaps not strong enough to kill but certainly to produce ill health or sickness. Bad water and bad air are often a cause for continued ill health, not to speak of definite diseases. The causes of many specific diseases have been definitely determined. It is positively known that in the absence of the cause there can be no disease, just as a field will be free from weeds unless seed of weeds is brought in, each kind reproducing itself and no other. But strange to say the cause of

much common ill health is not known. In fact, ill health may be due to a great variety of causes, often difficult to determine. Here again we may question to what extent common ill health prevailed among the Indians and the first white men.

All sorts of speculations may be made regarding the amount of ill health dependent upon complex life conditions. It can not be too strongly emphasized that the Indian and the early white settler led simple lives, coming in contact with few, while today there is a many-sided contact, especially among city people. There are even individuals who have come from far away countries who have brought with them the germs of foreign diseases. We need only think of our soldiers and teachers and missionaries in the Philippines bringing in new and strange diseases. Such diseases should be carefully studied and kept under observation to prevent their spread. It is perhaps unnecessary to say that tropical diseases may find the temperate zone as unfavorable for their propagation as tropical weeds find climatic conditions unfavorable. Out of a great number of weeds constantly introduced only a comparative few are able to maintain themselves in the new environment or climate.2

If we were to review the different diseases known to occur or to have occurred in Indiana it would be necessary to distinguish between native and foreign diseases, just as we must distinguish between native and foreign plants and animals and native and foreign weeds and pests and parasites of all kinds. Unfortunately early records of the first appearance of new diseases as of new weeds and parasites are scant. Now that many are common it is difficult to determine whether they were natives or not. The first white men were not observers or if so left no records.

The first medical men coming into our State were army sur-

¹ A few years ago I had an opportunity to study a tropical disease, Psilosis, in a missionary returned from Asia. Fortunately this disease did not spread, perhaps on account of unfavorable climatic conditions.

² While keeping track of new plants, mainly weeds, coming into Fayette county (Indiana), from 1883 to 1890, especially along the railroads, I was interested in noting that out of thirty-five new arrivals only nine were able to maintain themselves from year to year, and that not more than half a dosen of these became common weeds. (For details see Proceedings Indiana Academy of Science, 1893, pp. 258–262.)

geons and they left scarcely any records. It should be borne in mind that when we speak of a new disease we mean an old disease in a new locality, just as a new weed means an old weed now for the first time found in a new locality. Many old diseases are still absent in certain parts of the world, they have not been introduced. Some small islands are still free from a number of the common diseases but it is only a question of time until they will be introduced.

DISEASE VS. ILL HEALTH. Well-defined diseases shade off into ill-defined states of "ill health" where one can hardly speak of "disease." Diseases like conditions of ill health manifest themselves by symptoms. Is a slight headache a disease, a condition of ill health, or only a symptom? If stomach distress is persistent, or recurs frequently, we may speak of ill health, and yet the best medical skill may be unable to diagnose the presence of disease. Common stomach disturbances are commonly called "dyspepsia," due perhaps to one or several of a great variety of causes, as improper food, spoiled food, food that is too hot or too cold, or because of defective mastication, depressing conditions, etc., yet dyspepsia may not be a well-defined disease.

Many so-called diseases are really states of ill health often without ascertainable cause. The tendency nowadays is to classify diseases according to their causes. The highly artificial classifications of, say, a hundred years ago have practically disappeared.

The classification of diseases a hundred years ago, at the time when our State was first being settled, was by classes, orders, genera and species, just as in the case of botany and zoology. Many systems of classification have appeared, each one supposed to be an improvement over preceding ones, and physicians are just now working upon a new system which they believe will stand the test of time. Old systems were based on symptoms, the new is based on the recognition of the cause of the disease. Thus Osler's recent treatise takes up first the diseases due to animal parasites—those due, in order, to protozoa, parasitic infusoria, to flukes, cestodes, nematodes, and so on—followed by the specific infectious diseases, from typhoid and typhus fever running down to tuberculosis and leprosy, including some whose causes have not been definitely identified, analogy admitting their inclusion. The reactions or intoxications due to the ingestion of chemical substances, such as alcohol, morphia and lead,

fellow, with a mention of sunstroke—and then all at once there is a classification riot. For want of something better, a number of diesases are described under the head of 'Constitutional Diseases.' Then follow a host of affections and diseases that for convenience are grouped under their respective organs, beginning with the diseases of the mouth and running down the alimentary tract, followed by the affections of the other organic systems—the respiratory, the nervous, etc. One-third of the book is thus definite, based on a scientific system, the rest is simply based on convenience of reference. Although we have here real progress, yet how much still remains to be done."

Many of the common every day symptoms such as pain, headache, lack of appetite, cough, insomnia, constipation, may occur under a variety of conditions, as for instance a ride on a train or a visit to the theater. Those who have traced the relationship often prevent symptoms by avoiding the cause. Many have learned the lesson that prevention is easier than cure.

Some disturbances of the body are known as "occupational diseases;" there is a large number of them among men confined indoors, especially when employed in factories and exposed to various sorts of irritating dusts. We need only think of "knife grinder's rot," where the lungs are worn away on account of inhalation of gritty matter, usually followed or complicated by the entrance of micro-organisms that hasten the breaking-down process. "Industrial diseases are mostly dusty diseases."

Disease and ill health go largely with kinds of people and kinds of occupation. Some people are readily killed off by certain occupational or indoor diseases, while others are quite resistent. The Indian, for instance, who has always led an active out-of-door life is quickly killed off by so-called city or house diseases to which the Jews are quite resistent; the latter have long been exposed to them; the susceptible were weeded out for generations. Some occupations are highly injurious to life; those who follow them are short-lived, a fact considered by insurance companies in their mortality tables. Other occupations "take it out" of the men, disabling them so that when they reach the age of about forty years they are worn out. (A big industrial city has little use for men over forty.) A man's mode of life and habits are important fac-

¹ The Evolution of Medicine in Indiana. Proc. Ind. Acad. Science, 1906.

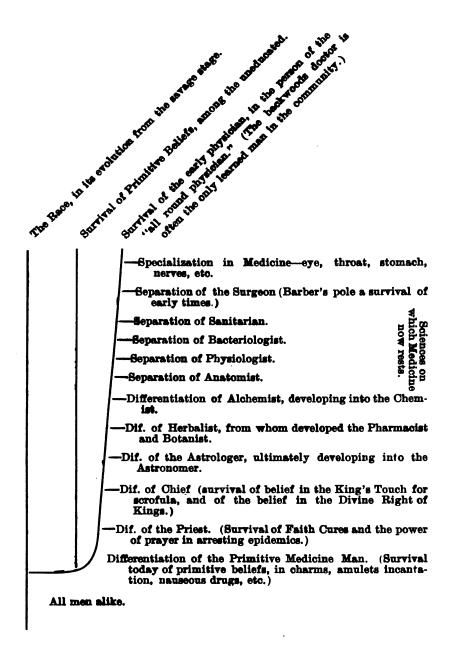
tors. The place of residence is important, whether in the heart of the city or in the suburbs, or in the country. In general it may be said that city life is very deteriorating and leads to "race suicide." A new born child must run the gauntlet of all kinds of diseases. Out of the many born comparatively few reach old age. In proportion as people live under simple conditions, in isolation, a larger number is apt to reach maturity and old age. Until recently sanitary conditions in large cities were so bad that cities were wholly unable to maintain themselves; they required the constant influx of new country blood.

STUDYING DISEASES AND ILL HEALTH. We all know that medical men are especially interested in diseases but some individuals in ill health have discovered that many doctors are not interested in ill health, as distinct from actual disease. Some physicians will discuss diseases with patients but have little to say about common ill health. As Moliere long ago observed, they want cases of severe diseases. As a rule their medical society discussions and articles in medical journals relate to diseases rather than to ill health.

Because of the fact that physicians do not discuss common ill health many communities are very backward in the matter of sanitation. A family physician may fully advise his patient and his family and yet not have a single word to say to the community as a whole. Indeed, there are not lacking doctors who merely sell medicine in competition with the druggist; they never give any general advice regarding the care of the sick and the prevention of ill health and disease. A common explanation is that "we are not paid for it," and some do little or nothing unless paid. Then there are not lacking physicians who are so ultra-scientific that their whole attention is given to the patient's disease in contrast to the faithful family physician who looks after his patient and helps him to throw off the disease.

The following table¹ may give some general idea of the evolution of the common medical man of today, showing how there has been a successive branching off. (Read from below up.)

¹ The Evolution of Medicine in Indiana. Presidential address Indiana Academy of Science, 1906



The Indian "medicine man" needs scarcely be mentioned because he was an ignoramus of the first water. The white man has nothing to learn from him.

The first white medical men in Indiana were United States army surgeons who accompanied the soldiers to treat the wounds inflicted in battle rather than those inflicted by nature. They left practically no records of conditions found. Gradually venturesome doctors from older communities came to the new settlements to treat the wounds and injuries and the simple ailments of the people, in time getting more and more to do as the old "diseases of civilization" came in. The first doctors were largely of the rough and ready kind; they used heroic measures and remedies; they bled and purged and vomited and resorted freely to the use of mercury. They were abhored by women and children and so it was not long before physicians of a different type gained a foothold, men who were opposed to bleeding and purging. Some of the old time diseases may have demanded heroic treatment but as a rule ill health (in the absence of well-defined disease) demands gentle measures, and often attention to a variety of little things rather than a lot of strong medicine.

In looking over the old Transactions of the Indiana State Medical Society one finds that some physicians believed there was a change going on in diseases, that not only were new ones coming in but old ones were undergoing a modification and required a different mode of treatment.

In the course of time medical schools were established. These at first had low standards; the students came mainly direct from the farm; high schools were unknown. Today Indiana has a comparatively high standard and instead of a number of small poorly equipped schools there is one good one. It may be said this is due to the activity of physicians themselves—often the people antagonize higher standards, being satisfied with cheap poorly qualified doctors, not real physicians.

Medical instruction at first was purely by lectures, the same lectures being repeated from year to year. Listening to them for two years was about the only requirement. In the course of time laboratories came. The students handle things and experiment. But there is danger of neglecting ordinary observations, especially by neglecting a study of people who have ill health rather than well-defined disease. There are no instruments for estimating pains and aches.

In time also specialists arose. At first there was a separation into physicians and surgeons. The surgeons sub-divided into different specialities, as eye and ear, nose and throat, etc. Physicians also divided into specialists, taking up the internal organs of the body. In the course of time general sanitation was given attention. The State was prevailed upon by progressive physicians to look after the community as a whole through a State Board of Health, followed by county health boards and this in turn by city boards of health. Unfortunately all of this work is still quite elementary. As a people we have not yet reached a stage where we fully appreciate disease prevention. Only recently an effort was made at Washington to organize a National Department of Health, co-ordinating all the various agencies in the interest of the people, just as the Agricultural Department, for instance, works in the interest of the farmer in giving him information about his animals and plants. But there is always bitter opposition to medical men and their aims and methods. When we study the question of chronic ill health we may find that many are opposed to physicians on account of their failure to "cure" common ill health, especially by the use of drugs. Much of the common everyday ill health is incurable but preventable, as I shall attempt to show later.

The term "doctor" originally meant a teacher; it still means that when applied to the college professor, but it has degenerated and from it we have the verb "to doctor." Many of the sick keep themselves poor by "doctoring," never getting the best that the art or science of medicine has to offer. Just as bad money drives out good money, so bad or poor doctors drive out good ones. When the people demand better doctors than they now have they will get them.

As already mentioned, there are all sorts of causes that derange health and bring on ill health, as there are all kinds of causes for accidents and fatalities. Many causes are avoidable and ill health and disease and accidents preventable. People living under good surroundings and leading "healthful" lives as a rule have little sickness. But in proportion as people live under or come in contact with unsanitary conditions, or are careless, they may suffer.

What the people expected from the old time doctor was mainly a lot of medicine. Many moreover had a belief that the nastier medicine was the more powerful it was apt to be. Intelligent people are gradually getting further away from that idea; they want less and less medicine and more and more advice. Physicians themselves have long realized that many ills are incurable by drugs but that symptoms can be modified or palliated. But there are still too many people who want only palliation, who only come to the doctor when feeling bad; the moment they feel better they cease to report. Many give him no opportunity at all to "supervise health" and reduce their ill health to a minimum.

Today we frequently hear the terms Health Inspection, Medical Inspection and Health Supervision. These terms are especially used in connection with school children. The people are gradually beginning to realize that there is more in the practice of medicine than the simple giving of drugs.

THE EVOLUTION OF DUST.

Cosmic Dust.

Volcanic Dust.

Desert Dust.

ABBENCE OF MAN.

Plant Pollen Dust.

Wild Animal Trail Dust.

Traces of Dust due to Man.

HUNTING AND FISHING STAGE.
(All men alike.)

PASTORAL STAGE.

Domestic Animal Dust.

Dust in Tents.

House Dust.

AGRICULTURAL STAGE.

Country Path or Road Dust.

Shop Dust.

HANDICRAFT STAGE.

Village Street Dust.

Shop Dust with Spittle.

Paved Street Dust.

Factory Dust in variety.

INDUSTRIAL STAGE.

Sidewalk Dust mixed with Spittle. Tobacco Juice Dust.

Trailing Dress Dust.

Age of neglect of the Feeble, Aged and Sick.

Origin of House Diseases.

Care taken of the weak, aged and sick;

Greater development of Parasitism.

Employment of the feeble in shops.
Rapid development of air-borne diseases.
Homes for the aged and feeble.
Free use of alcohol.

Large factories; crowded tenements; dusty and smoky air.

The age of hospitals and dispensaries, throat and chest disease specialists.

No pure air in large cities.

III.

DUST AND DUST VICTIMS.

There are numerous kinds of dust. We can classify them under two heads: Dust found in nature independent of man, and dust due to human activity. The divisions of course overlap, as dust coming from a field which originally was a forest. One can easily see how in the absence of man there would be no such dust and yet at present we speak of this as dust independent of man. The table opposite in a general way classifies dusts in the order of their probable appearance during the different stages of man's development.

Dust due to human activity may in a general way be divided into Country Dust and City Dust. The kinds to be found in the country are few in number although making up in volume. In large cities there are almost innumerable kinds, especially in dusty occupations. It would be an almost endless task to attempt to describe occupational dusts and their deleterious influence on human welfare, but if we narrow our inquiry down to say nine-tenths of the people and to nine-tenths of the prevalent kinds of dust we can better arrive at some general conclusions.

Country Road Dust. This is the commonest form of dust. It consists almost exclusively of pulverized mineral matter. People who live in cities with well-paved streets or in countries with well-kept roads have no idea of dust conditions that at times prevail in backward communities. Many of our roads and so-called city streets are covered with from two to three inches of dust (according to some of our local newspapers even to a depth of half a foot, but this is clearly an exaggeration). This dust is more or less constantly arising and is carried about by air currents. A strong wind will fill the air with a large amount of fine particles, dust proper, while the larger particles are forced along the surface until they come to rest, giving protection to the finer particles under-

¹ Proceedings Indiana Academy of Science, Presidential Address, 1906.

neath. With continued high wind there will be less and less dust blown about. At times the surface of some streets shows peculiar markings, ridges, resembling those of wave marks along a shore. Any unusual gust of wind disturbs this natural arrangement of particles; it is of course disturbed by passing vehicles, that means on streets that are much travelled there are constant dust clouds. At times a street will be wind-swept down to the hard underlying "bed rock," that is, to the gravel or stone which has not yet been pulverized. This condition is frequently seen on long, wide east and west streets where the wind has free scope.

DUST FROM PAVED STREETS. This varies in quantity and in composition. In a large city with paved streets everywhere and with practically no mud tracked on from unpaved streets, dust is composed chifly of horse droppings and coal dust, including under this term dust traceable to or derived from coal. In manufacturing towns there may be a large amount of this latter. Then there are dust particles derived from the wear and tear of the paving material itself, besides various additions from human beings.

The small city as a rule has only a few paved streets in the heart of the city and "paved street dust" is mainly that brought from the unpaved streets, either blown on by the wind or more commonly tracked on by vehicles, that is, the material adheres to the hoofs of horses and wheels of wagons in the form of mud. On paved streets this dries out rapidly and becomes pulverized, differing little in composition from unpaved street dust. After a rain unpaved streets may be "seas of mud," while a nearby paved street gives off a heavy dust-cloud.

GLASS DUST. One very important ingredient in town dust is pulverized glass. The amount of glass thrown on to streets which ultimately becomes pulverized, and of course blown about, is really remarkable. It seems strange that such conditions should be allowed to exist—but what is everybody's business is nobody's business.

POLLEN DUST. The amount of pollen in the air during the summer varies greatly. Pollen is derived from many plants, both

wild and cultivated. We need only think of the clouds of pollen dust near pine forests, of which we have none here, however. Of pollen dust due to wild plants perhaps the most noted is that derived from the Ragweed (Ambrosia artemisiæfolia), which manifests its presence in those susceptible as "Autumnal Catarrh," commonly known as Hay-fever. There are of course many different kinds of pollen; some individuals react to one kind, some to another. "Rose Cold" is ascribed to the pollen from roses.

SPIT DUST. This is the most important kind of dust from the standpoint of the sanitarian. It varies in different cities and in parts of the same city. European cities as a rule are remarkably free from it, while in our country where the tobacco chewing habit prevails it is very common. In large cities it is apt to occur most plentifully in neglected sections, especially in slums, while in the smaller communities it is mainly found in the heart of the city where street loafers meet.

The amount of tobacco spittle on sidewalks of smaller communities is really remarkable. The photographic reproductions in the Appendix will perhaps give some idea to those unacquainted with small city conditions. The student of dust influences naturally goes to a community where the kind of dust he proposes to study is most abundant, just as the hay-fever student goes to a country where hay-fever or its particular pollen dust is found. The effects of coal dust and soot and smoke are best studied in a smoky city. The effects of spit dust are best studied in a community where the spitting habit prevails, not only sidewalk spitting but also floor spitting. Spittle is tracked about, it dries and becomes pulverized and fills the air. Spit dust is common not only on down town streets but also in stores and offices. It is carried home on shoes and dresses. Country women with trailing dresses may carry a large amount to their homes. The term spit dust is not an elegant one; it grates on the ears when heard repeatedly, therefore in this volume the simple term dust should be understood as applying to spit dust. The terms bad air, crowd poison, and similar references in this volume should also be understood as synonyms.

SMOKE AND SMOG. Some cities and towns are smoky rather than dusty, especially manufacturing communities where no attention is given to smoke prevention. A smoky city is naturally more or less dusty because no special efforts at cleanliness are made. Recently the term smog came into use, signifying the smoke, dust, and fog cloud which overhangs cities. There are all sorts of opinions regarding the injuriousness of smoke. It is well known that carbon particles are deposited in the lungs. The lungs of old city residents may be coal black, yet some of these people live on to old age; they are exceptional of course. That the effects of smoke on comfort, on clothing and on furniture, and on health are more or less marked must be self-evident. The air of a smoky city may be so bad that trees can not thrive in it—but human beings are expected to thrive. Since this volume is a study of the influence of dust, the subject of smoke must be dismissed with this brief mention.

INDOOR DUST. Many people when they hear the word dust think of the dust clouds blowing about out of doors; the physician thinks mainly of indoor dust. This latter of course varies greatly, depending on the nature of the building, whether a home, store, factory, school house, church or theater, etc. It will also vary according to the kind of people who occupy such structures, whether or not they are cleanly in their habits. Thus a five cent theater may have a very filthy floor, giving off a virulent dust, while a fine opera house patronized by clean people only may be relatively clean. The location of a house may be very important. To realize this one need only look at a down town stairway leading from the sidewalk to the upper floors; some have a mass of filth all the way up, with much dust blowing up into the rooms. In the suburbs a stairways may be clean. Some buildings have special forms of dust; we need only think of school houses and chalk dust, to which some individuals are susceptible.

There are all kinds of indoor dusts to which special names may be applied. To some bookdust or library dust is important. It will readily be seen that this is mainly an accumulation of dust that has been in the air and has settled down on the books, especially on those with rough edges. However one must not forget that infective material may be deposited between the leaves by coughing or sneezing, as well as by soiled fingers. Whether a library is in the heart of a dirty city or in a clean suburb inhabited by cleanly people may make a marked difference to the reader who is a dust victim.

Dust of Dwellings. In a general way this can be divided into several varieties, the most common being Floor Dust. amount varies greatly in different homes and is dependent on a number of factors, especially on proximity to dust sources and on the nature of the floor covering, being least with waxed floors and greatest with a carpet that is tacked down and very seldom cleaned. (I have known carpets that have been down for several years; any one walking over them would stir up a cloud of dust, clearly visible in a beam of sunlight.) One can readily understand how people living in rooms heavily carpeted may be constantly inhaling dust and why there should be complaint of symptoms of ill health. At times people will complain of windstorms bringing on certain symptoms or an attack of ill health. Further on I mention a patient who thus complained. The cause was floor dust, blown out of crevices and carpets. Another dust that should be mentioned is that derived from hot air furnaces, especially from old leaky ones. The question, What is the best method of heating a house? is not at all a simple one.

The different sources of house dust need not be enumerated. I recall the home of a patient where the wall paper contained glistening mineral matter, which was constantly falling off in the form of a very irritating dust, this being most marked on windy days when the accumulated matter would be blown out of the cracks in the floor and fill the room.

In households where featherbeds are still used the bedrooms may be filled with an irritating "feather-bed dust" to which some react.

Feather bed dust is one of the few kinds of dust to which I react, as I discovered on sleeping in an old feather bed in an isolated mountain inn among the Alps. This dust sets up a profuse mucus flow. The experience seemed so odd that I made a note for a medical journal (Indiana Medical Journal January, 1901).

STERILIZED AND UNSTERILIZED DUST. Dust containing dried spittle may contain all sorts of infectious matter, especially that derived from people in ill health or diseased, those having colds and catarrh, bronchitis, etc., including pneumonia, and tuberculosis. But such infectious matter becomes sterile, harmless, in the course of time, both under the influence of age and of bright sunlight. Strong sunlight quickly destroys microbic life. Protected from sunlight, as in a closed room, infected dust may retain its virulency for a long time, for months.

Popularly it is believed that the air of the country home is good; as a matter of fact often it is worse than that of the city home. Country women will trail their dresses over filthy sidewalks and then clean them in the living room, filling the house with infection. Many city homes have waxed floors and rugs that are taken out and cleaned frequently, but country homes as a rule have a carpet that is taken up only at long intervals, perhaps not even once a year. The mode of heating a house must also be considered, whether there is constant ingress of outdoor air.

A farmer who sees clouds of dust blowing off a road or from the fields (in harrowing a field great clouds may be given off) may not realize that dust from a filthy city or from an old carpet is something entirely different, a something to be avoided.

In studying dust influences one must not only consider the place of residence, the kind of home, but also habits of general cleanliness. As a matter of fact, the study of dust influences is a study of endless details, as case reports cited later on may show.

"Beneficent Dust." Several years ago a short article under this caption made the rounds of the newspapers. Several of my a-b-c patients gave me copies, thinking that the article was antagonistic to my own ideas regarding the injuriousness of dust. That article was evidently written by a physicist and the kind of dust he had in mind was more particularly the cosmic dust that floats high in the atmosphere, modifying light and moisture. My "old experienced patients" readily saw that the article and the kind of dust had nothing whatever to do with the very practical aspects

of the dust problem as seen in every-day life, the battle of the housewife against dust and of communities warring against dirt and dust.

SPITTING OR EXPECTORATION.

We must distinguish between two kinds of spitting, one necessary, the other needless. Spitting tobacco juice is wholly senseless. It seems strange that men should fill the mouth with a poisonous weed and then begin to work the jaws and secrete a lot of fluid which, discolored by tobacco, is spit out promiscuously. many of these spitters have catarrh and bronchitis and tonsillitis and consumption must be self-evident. Moreover the tobacco user encourages others to spit. In European countries where the chewing of tobacco is unknown one sees little spittle on the sidewalks. One of the first things Dickens noticed on coming to our country was the American spitting habit. He also wrote of American catarrh, but he evidently did not see the relationship. When spittle is pulverized, it arises as dust and is inhaled by others, the germs in it ready to set up disturbances. As the seed of weeds go from one field to another, so the germs of diseases go from one individual to another.

The practice of spitting upon or at a person to show utter contempt has practically disappeared. It is to be hoped that the practice of chewing tobacco and soiling floors and sidewalks will also disappear. Some even advocate anti-smoking laws because the smoker (men, women seldom smoke) spits more or less.

The other kind of spitting, perhaps it should be called expectoration, is a normal or physiological process, especially common among people living under dusty air conditions. Dust inhaled lodges on the mucous membranes, all the way from the nose down into the lungs (a small quantity may lodge in the lungs and be imbedded in the tissues and the lungs in time become black; the lungs of people of smoky and dusty cities are usually coal black). Mucous membranes contain glands which give off mucus which forms a coating, protecting them. But a more important function of mucus is to entangle dust. The city man when he blows his

nose "blows black." When sufficient mucus has accumulated in the throat it can be hawked up. Students of bird lore know how the owl ejects pellets; it swallows mice and absorbs the nutriment and then the bones are wrapped in the skin and cast out. A similar process occurs when dusty air is inhaled, we "spit black." One need scarcely refer to the fact that the body absorbs the lifegiving oxygen from the air and emits carbonic acid gas, the latter a union of the oxygen inhaled with the carbon ingested as food, the result of the decomposition being heat and force.

But we should clearly distinguish between these two kinds of spitting, more properly speaking between spitting and expectoration, the one is useless and unnecessary, the other a normal process that should be encouraged.

During the last few years there has been a general command, Do Not Spit. This has led many to retain what nature intended should be spewed out. Children are often reproved for expectorating when in fact they should be encouraged. But where should abnormal secretions be deposited? Spittle, or expectoration, should be deposited where it does not become pulverized and fill the air! This is particularly necessary in the case of those afflicted with disease. Some persons think they are cleanly when they expectorate into a handkerchief, but if we observe how some shake their handkerchiefs in the air, especially in closed rooms, we will come to the conclusion that that is not at all a sanitary practice. The Chautauqua salute for this reason is now recognized as objectionable.

Railway passengers are often compelled to inhale much smoke and dust; this is followed by a free formation of mucus. What shall be done with this? Some railroad companies furnish cuspidors; others have conspicuous signs, Do Not Spit, leaving the passenger at a loss what to do. He will either spit into his handkerchief, out of the window, or stealthily on the floor, or perhaps swallow what nature intended should be spat out. Riding on cleanly trolley cars is less apt to be followed by a mucus flow. Although the average trolley car may show less dust than the average day coach, yet the dust may be more objectionable because containing

more infection from spitters; spitters are more apt to patronize trolleys.

What about sidewalk spitting? Some European cities have a small stream of water flowing along the gutter.

The solution of the anti-spitting question may seem complex; in reality it is simple. People who inhale clean air have no abnormal respiratory secretions, they have no need to spit at all! The remedy is to clean up! When our cities give their people clean air as they now attempt to give them clean water the necessity for expectorating will disappear. And as to the tobacco chewer, he should be sternly repressed. He is an anomaly under present-day civilization, and no doubt the smoker also will become an anomaly before long.

Sometimes people question, Is dust after all injurious? We might refer them to the watch maker or the automobilist; they have some decided opinions! Why should dust be less injurious to the human machinery?

Every housewife knows that a small particle of infection in her canned fruit produces a certain effect. A large amount of common dust may choke up a man but a smaller quantity of infected dust may produce effects not so quickly apparent, although perhaps much more serious, as I shall attempt to show in Case Reports.

Some ask, What becomes of the dust that is inhaled, how does it affect the body? How does it affect the organs? How does it affect states of the body designated as health and ill health and disease? Some people are constantly hawking and spitting; whatever they inhale comes up entangled with mucus; others never hawk and spit; all the dust inhaled seems to remain. I have some patients under observation who the moment they cease to "spit black" begin to complain but with a return of this expectoration feel better. Some may actually be sick during this interval; apparently there is an overworking of the defences of the body. It would seem that the resulting sickness is really a conservative process and that the pains and aches are merely warnings that a struggle is going on in the body.

While these notes were being put together one of my old patients, who has been with me for years, had undergone a siege of "lumbago." He is a dust victim who complains both of "dyspepsia" and of "rheumatism." His occupation is one that compels him to inhale much coal smoke; he always "spits black" but he does not complain unless he also inhales infected dust. Recently he had a disturbed stomach and then lumbago developed; this rendered him bedfast or at least "housefast" for several weeks. It was really an enforced vacation. He soon noticed that his stomach was "all right" and that he no longer spit black. On getting back to work he promptly began to "spit black" and it will be only a question of time until he again complains of "dyspepsia."

This patient had had all sorts of experience among physicians before coming to me. The last one blistered him to such an extent that he had to stop work—he got better however. He now wonders whether the best place for a blister is not on the soles of the feet; that will keep a man at home and give nature a chance, to cause symptoms to disappear, not to speak of "bringing back health."

Medical men have names for the effects produced by the inhalation of different forms of dust: Anthracosis for the effects produced especially in coal miners; Byssinosis due to inhaling cotton dust, as in cotton factories; Chalicosis, Silicosis and Siderosis are names applied to affections in potters, stonemasons and ironworkers who inhale gritty matter. The term Pollenosis is now coming into general use; the name indicates a state or condition produced by inhaling pollen, that is in those susceptible. Lack of space prevents entering into further details. From now on we shall consider the effects of infected dust, Coniosis.

The photographs in the Appendix show why infected dust is common in some communities—communities where the tobacco spitting habit is unrestricted. The tobacco chewer encourages others to spit, not only on sidewalks but also on the floors of buildings and street cars.

DUST VICTIMS.

Individuals who react to infected dust (spit dust) may properly be called Dust Victims. There is a marked variation in susceptibility. Some react readily, others scarcely at all. We do not know why some individuals react to some things or causes and not to others, why for instance one may have rose cold and another hay-fever, no more than we know why some people can not eat strawberries or papaws or cheese without feeling bad. Some can not drink soda water. Some teachers can not work at the black-board on account of irritating chalk dust. Because we do not know why they react, we say the individual has an idiosyncrasy, dismissing the explanation with a long word, which after all does not explain. Some men on attempting to work in certain factories encounter certain kinds of dust to which they react; they "give up the job, just can't stand it." That also is a simple explanation.

I have frequently talked with individuals who believed they were subject to crowd poison, they avoided certain places. "Crowd Poison" is a vague abstraction, it does not enable a man to guard himself. He assumes crowd poison to be an entity, and yet he does not know where or when it is found nor how avoided. How many individuals are required to make a crowd? Is one's own family a crowd? Is a man living at home subject to crowd poison? Some of these individuals became my patients and in time learned that crowd poison really means Dust Poison, that they were Dust Victims. By learning whether infected dust is present they can largely avoid symptoms of ill health. They can go into crowds of neat and clean people where the air is reasonably pure, but it is risky for them to go, for instance, to a political meeting where men spit on the floor. (Perhaps this explains why some men take no interest in ward politics.)

CLASSIFICATION OF DUST VICTIMS. In studying a large number of dust victims one can divide them into groups, according to how they react or how they complain, or as a physician would say, according to their syndromes or symptom-complexes. In other words,

there are different kinds of dust victims. At the one extreme the reaction may be so slight that one can scarcely speak of ill health or sickness; there may be a mere sense of discomfort, there are not even well-defined aches or pains, yet the individual recognizes the fact that he is "not up to standard." At the other extreme, attacks may be so marked that the individual is promptly disabled. The chief kinds of types of dust victims may be classified about as follows:

1. Simple Dust Victims may complain of a mere sense of discomfort. There is no localization in the body unless it be in the respiratory mucous membranes, which may be more or less irritated. An acute attack often manifests itself as a "cold," and we know that that usually means an irritation of the air passages accompanied by cough. (Cough is mainly a conservative process, it helps to bring up abnormal secretions and inhaled dust.) There is more or less secretion from the mucous membranes, commonly called catarrh, varying from very thin and watery to thick and purulent. It is rather unfortunate that the term "Cold" is used but since "everybody knows what a cold is," even physicians continue to use the term.

Colds are most common during the cold season because then people house themselves up, they live in an "indoor climate." People who live in the open are no more subject to colds in the winter than they are in summer. Often an attack of dust infection manifests itself by what may be called a pre-cold; "sitting in a draught," "getting the feet wet" may bring a cold to the surface. I know from personal experience that colds can be largely prevented by giving attention to air conditions.

Perhaps it is needless to refer to the well-known observation that colds often "change to something else." A deranged alimentary tract is very common, likewise nervous symptoms, notably headache and restlessness and sleeplessness. That colds are often the foundation for fatal diseases is well known, embodied in the old saying, "Caught his death o' cold." To the physician it is interesting to find out what preceded the fatal termination.

People habitually living under bad air conditions are more or less annoyed by what is known as catarrh and hence many people have the idea that catarrh is universal, that everybody has catarrh. This is not true. Dyspepsia is also very common, especially among city people, some of whom are constantly dosing themselves with dyspepsia cures. Yet when such individuals exchange air conditions and get into good air their so-called dyspepsia may promptly leave them, to return with a return to bad air conditions. An attack of dust infection that produces a "cold" in one may produce an attack of dyspepsia in another. Still another may have a headache, or an attack of so-called nervous prostration.

2. Rheumatic Type. In this type an attack is manifested by pains and aches, at times localized. In many the pain regularly recurs at the site of an old injury, that is, every time there is an exposure to bad air a certain part of the body begins to ache. Dust victims of this type are often referred to as being rheumatic or gouty. The latter term is rarely used in this country, but is very common in England. Individuals who are said to have gout or to be gouty are often found to be dust victims; a sedentary life and overeating are factors.

We all have heard of the old soldier who carries a bullet in his leg and who is said to be able to prognosticate the weather; he feels the pain at the site of an old injury. These "human barometers" are usually dust victims.

3. Digestive Tract Type. In some individuals the alimentary tract rather than the respiratory reacts, there are all sorts of disturbances in the stomach and bowels, perhaps also in the liver. In a general way one can divide this group into two classes, those in whom the reaction is mainly in the stomach, manifested by so-called "dyspepsia," and in the other where the disturbance is chiefly in the intestines manifested mainly by constipation. A large number of individuals however have disturbances throughout the alimentary tract. In some the disturbance begins in the stomach and gradually extends into and through the intestines, with all sorts of symptoms and with more or less mucus. At times much

mucus is vomited and then again mucus is passed off from the bowels, often in the form of strings or ribbons (membrancus catarrh of the intestines). Dust Victims of this latter kind usually have a train of symptoms referable to the nervous system and hence this class forms a connecting link with the next group.

- 4. Nervous Type. Europeans sometimes speak of a Triad of American Diseases, namely, catarrh, dyspepsia, and nervous prostration. Some dust victims manifest a train of nervous symptoms. headache being the most common. The names commonly applied are nervous prostration, neurasthenia, hysteria, hypochondria, imaginary illness, etc. They exhibit no well marked evidences of "disease" and because the physician is unable to find "lesions," that is, organic changes, individuals are at times referred to as having an "imaginary disease." If they get no satisfaction from regular physicians, they naturally apply to irregulars and quacks of all kinds in their attempt to get relief. Often individuals present the picture of health; they may complain very little-only to the physician who understands them. This form of dust infection is common among people who use their brains rather than their hands. In illustration one may say that a headache disables a brain worker, while a backache disables a manual laborer.
- 5. Cardio-vascular Type. In this type the reaction manifests itself mainly by disturbances in the blood-vessels and heart, including at times the blood-vessels of the organs, notably the kidneys. This type is to be especially looked for in individuals past middle life; there is a progressive development more or less rapid.

Dust victims as a whole fall into two groups: (a) Those in whom there is low blood pressure with a tendency to end in such wasting diseases as tuberculosis and catarrhal pneumonia; (b) Those with a high blood pressure, tending to so-called heart and kidney diseases, perishing especially from apoplexy or paralysis or from Bright's disease.

CLASSIFYING PATIENTS. Ill health like disease is no respector of persons, but the ill health of small children may differ from that of old people, as the ill health of the man in active life may differ from either. One can group patients as follows:

- 1. Small children up to school age.
- 2. School children up to the time of getting into some occupation.
- 3. Occupational life, that is, the active period of a man's (or woman's) life.
- 4. The time when a man is "no longer wanted," that is about the time gray hair begin to appear. This is the time when the busy city has little use for a man and when employers are on the lookout for a younger man.
 - 5. Old age, when a man is no longer able to work.

A physician can also classify his patients according to their occupation. But in this case the physician's location largely determines. We need only think of the physician in the agricultural community or in a mining town or in a manufacturing city. A physician in the heart of a large city encounters a different class of people from one who is located in the suburbs. The small town doctor usually has good opportunity for studying a variety of people, including of course farmers.

All sorts of classifications are possible, including such simple ones as patients able to pay for services, or not able to pay; patients who ask few questions but ready to swallow any medicine, those who ask many questions, who want to know and who hesitate to take a lot of medicine. The people themselves have the doctors classified and they have their preferences. They may consult one and wholly neglect the other. There are all sorts of people, all sorts of patients, and there are all sorts of "medicine men" to supply wants and needs.

CLASSIFYING THE PEOPLE. The people of a community can be classified in the light of "case reports" to be given in this volume about as follows:

- 1. The Healthy. Naturally people of this kind do not come to the physician. If he wants to study them he must look them up.
- 2. Those in ill health (without any well-defined disease). Individuals of this kind often drift about among physicians, getting plenty of medicine and more or less advice, but rarely any study regarding the causes of their ill health. This is the kind of cases here especially con-

sidered. Out of this group those who are willing and able to follow the physician's advice are the desirables.

- 3. The diseased, that is those afflicted with a disease (well-defined disease or disease due to a definite specific cause). We need only think of cases of tuberculosis or typhoid fever, of cancer, of lead poisoning, etc.
- 4. The moribund, where the sand of life has about run down, with death in sight, where little is to be expected from any sort of treatment. There may be so little health left that the student of dust influence does not want them at all. (That an individual is in a critical condition can often be discovered only upon thorough investigation—and then it may seem cruel to refuse services.)

PATIENTS OR FELLOW STUDENTS. In order to study the subject of Dust Influences fully and follow up developments, a physician must have patients who are willing to help, who will observe how they are affected and report faithfully. The best patients of course are those who are both willing and fully able to live up to the physician's best advice. Those who can not do this can scarcely expect much from a physician. The poor man who works when he should rest is to be pitied. He requires more than a "little medicine."

MISSIONARY SPIRIT. When an individual who has had more or less ill health gets relief he may manifest a desire or disposition to help others. Some recommend "my doctor;" others give copies of a prescription which helped them. Some recommend some nostrum or patent medicine which seemed to have benefited, they even write testimonials. A man cured by some "faith cure" may publish an account of it.

There is another way in which this disposition manifests itself: allowing the physician to use case reports. Physicians of course constantly use case reports and case histories without asking permission or saying anything to their patients, but such reports are usually so written that the patient is not likely to be identified. The physician practising in a small community however can not do as he pleases about reporting cases. One very potent reason why the country doctor writes so little for the medical journals and reports cases is that if he characterizes too closely there is apt to be identification and as a result perhaps get him into difficulties.

Although many people do not object to being talked about by the doctor, others object seriously. Some do not want "a doctor who talks."

At times a physician may give service to individuals in return for data, that is allow him to use case reports. Every community has poor people but unfortunately their lives are so monotonous that to cite one or two instances would answer for a whole series. People leading more or less eventrul lives and who stand out in a community can not readily be cited (except of course those coming from a distance), but now and then an individual willingly allows his case report to be used in what may be called a Missionary Spirit. There are all sorts of movements in which people enlist as missionaries; today there is even a good air movement.

A Personal Mention. The dust victim that I know longest is myself. That I reacted to bad air conditions I first fully realized on entering medical college. Naturally I have given the subject of bad air, of dust influences, more or less attention ever since. In a volume like this, one does not care to speak about oneself but some of my patients have allowed me to use their case histories on condition that I make mention of my own.

When I first entered medical college in the heart of a large and dirty city in the fall of 1889, I had a constant succession of "colds," with catarrh and aching throughout the body, with malaise and finally eye trouble. I felt bad, I was not really sick and yet I was not well. Naturally I asked advice and got all sorts of explanations (all but the right one), as well as all kinds of prescriptions and medicines (all but the right kind). One soon comes to question opinions concerning the presence of diseases as opposed to ill health. I found out for myself that I was reacting to bad air, not alone of the college whose many clinics were visited by all sorts of sick people and where ventilation was very poor, but also to the air of the heart of the city itself, where the medical student rooms. I had always been used to good air. I came near not passing through medical college at all on account of ill health. When I got back to good air my troubles vanished, but every now and then I had an

acute attack and I naturally attempted to trace it and find out how I "eaught cold."

After a number of years spent in hospitals, I decided to make a systematic study of common ill health dependent on bad air, i. e., air filled with infection mainly due to the spitting habit. That was the kind of air that affected me. In order to get a variety of cases, i. e., a variety of people living under different surroundings, including country people, I located in a "spitter's town," confining myself to "internal medicine," that means especially to exclude surgical cases. As a new doctor in town (in 1900) I naturally got all sorts of applicants for professional services. Old chronics especially seek out the new doctor, hoping he may have something that will cure or benefit them. Among the applicants were some who reacted to bad air as I did: I understood them at once and my advice benefited them. But there was a large number of "old chronics" that I did not understand and in a short time they discovered this and left, to try somebody else. Gradually I learned that many "old dyspeptics" were really dust victims, that exposures to bad air were followed by a reaction which manifested itself mainly by a disturbed alimentary tract. Later I found that in some dust victims the nervous system is disturbed and still later that the circulation may be disturbed. All these things I had to learn: I did not find them in the books. Since I myself had only what may be called a simple form of dust infection, I did not realize that others reacted differently, nor that as people grow older they may react more acutely.

In time, after I had considerable experience, I began to write papers and present them before various medical and scientific societies. I not only wanted to tell what I had observed but I also wanted criticism, wanted to learn of the experiences of others.

In the course of time as I took up different types of dust victims, I had to abandon earlier-studied forms on account of limited time, and then it became a problem what to do with applicants. One cannot briefly refuse an old chronic who has had years of ill health. But to properly work out a case, to make a diagnosis and

at the same time rule out the presence of definite diseases, often takes much time; and then too, some people require a lot of explanation in order to understand and follow advice.

In publishing papers I usually obtained a lot of reprints. These I distributed to those who might profit by them. The question of gathering together papers and reprinting them or of getting out and publishing a volume has been considered for several years.

Since my first year in medical college I have not been exposed to air conditions as bad as those. I obtained my medical degree from a smaller school in a smaller city where air conditions were relatively good. They were bad enough but comparatively speaking they were fairly good, and I held out until near the close of the year, and then mucous membranes became irritable, and that is apt to make one feel irritable generally. On account of the nearness of the eyes to the irritated air passages, the eyes became affected and since then I have been compelled to wear glasses. During later years there have been occasional short exposures to bad air conditions but the reaction has rarely resulted in continued colds or in purulent catarrh. The transient catarrh has been of the mucous kind, really a physiological process designed by nature to entangle solid matter inhaled in the air, enabling one to cast it out. I average perhaps two decided colds a year, but a condition which may be regarded as an "incipient cold" or threatened cold occurs frequently, whenever there is a sufficient exposure. I shall refer to this again later, under "Kinds of Colds." But in time one learns how to head off, especially by avoiding additional exposure and spending time in good air.

But gradually other symptoms of dust infection appeared. In other words, as one gets older the disturbances may manifest themselves differently and in different parts of the body. Thus since spraining my back I now and then get a backache after being exposed to bad air, in fact at times a mild backache may be the only evidence of an attack of dust infection.

At first when I discovered I was a dust victim and could not live under bad air conditions as others, I was inclined to bewail

my fate, but in time I learned that there are compensations. Because I am susceptible I am in a position to understand those who are similarly sensitive, a class of people whom the physician in robust health may wholly misunderstand. Today many complain of ill health rather than of disease: there are many who have ill health to one who has well defined disease. If one patient in fifty who apply to the physician had disease and died the race would soon become extinct.

The reader will soon notice that my practice differs from that customary among physicians, the reason is simple: I was, and still am, after data regarding common ills and ill health and causes, data usually obtained with difficulty. The practice of medicine is greatly simplified by calling every complaint "disease," and it is still more simplified by merely "treating" cases and not making any inquires about causes or giving advice on how to prevent recurrences.

In questioning old chronics who have had much experience among physicians one constantly meets those who complain of not having had the square deal—and physicians complain similarly. This is a painful subject. Is it necessary to add that a physician who is not earning enough to make a decent living in time loses interest in many things that bring in no returns?

Does it pay? is a question constantly heard when anything new is proposed. Does it pay to give attention to dust? Here and there throughout this volume I have asked and answered this very practical question—but each man must find his own answer.

To me this volume is of value in that it enables me to avoid lengthy explanations by words of mouth (not to speak of writing long letters). I can now refer people, especially new patients, to "my book."

There is an old saying, God helps those who help themselves. Concerning the "old chronic" who has ill health rather than well-defined disease (especially he who reacts to bad air) one may paraphrase: The physician helps those who help themselves. There must at least be full co-operation—and the man who is not fully able to live up to the physician's best advice is to be pitied, only too often he is left to his fate.

In general it may be said that it is as easy to get data on the evil influences of dust among poor people as it is difficult to get data on good air influences—because few people are willing or able to live up to good air advice with all that this implies.

If Pure Air could be bought at the drugstore (and taken with all that the good air treatment implies) it would be a more popular remedy than at present.

Since this is not a systematic treatise but merely an account of my work and observations, the personal pronoun I constantly occurs.

To old patients and to friends I am under many obligations for data, for records, for newspaper clippings, for references to literature, and for criticism. I herewith thank them all.

A FEW CASE REPORTS OR CASE HISTORIES OF SIMPLE DUST VICTIMS.

G. T. Well developed farmer boy of 18 years. Typical history of dust infection. Every time he goes to town, or, rather, returns from town, he feels feverish, followed by headache, soreness in the chest and at times in the larger joints, with profuse expectoration.

Excepting much hypertrophied tissue in the throat, due to repeated inflammation, I could detect nothing wrong about him. He seemed to be a picture of health. We discussed the nature of the difficulty and I advised him to remain away from town or to go only on wet days, when there was no dust. He has since acted on this advice and gets along in comfort.

This was the only case, excepting another farmer, where the patient himself was able to recognize the dust as the one factor in bringing on the illness.

The above is a simple "illustrative case report," taken from a paper on Dust, A Neglected Factor in Ill Health, which I presented before the Indiana State Medical Association, 1904.

Since I had seen a number of similar cases, I at once "understood the case." As a matter of fact, the young man reacted much as I did myself under bad air conditions, only he was much more susceptible. That I promptly classified him as a dust victim was of course natural.

A physician constantly finds himself in the position of a novel reader who opens a book in the middle of a story: he wonders how it all began and how it will end. But the novel reader, unlike the physician, can readily find out. The amount of reliable information a physician gets from people regarding their past lives varies greatly; as a rule people are poor observers and readily forget. For this very reason it is really the exceptional individual who gets the physician's best attention, who gets more than routine attention.

Such an individual usually gives a history of good health up to the time of going to school, after that ill health or attacks of ill health may be common. Many country children promptly react to the air of the school room; they have irritable throats and more or

¹ This paper was written mainly in general terms and reprints were distributed to patients and later on as long as they lasted to applicants who could not be accepted as patients.

less inflammation followed by scar tissue, as in the case just mentioned. There may be adenoids and enlarged tonsils, defects of sight and hearing, etc. Some are not able to bear school life at all and if the parents persist in sending such a child it is likely to perish. The very fact that a child survives school life must be taken as evidence that something can be accomplished by good advice regarding the future of the individual. To what extent shall one make explanations to a young man like the above?

We all make explanations by drawing analogies. A farmer boy readily understands illustrations drawn from plant and animal life. In this case I explained that of many seedlings comparatively few develop into plants that produce seed and are able to reproduce themselves. Plants may spring up so thickly that there is a struggle for mastery of the soil and many perish. A late frost may kill or the hot rays of the sun may be fatal. Too little or too much moisture may also be fatal. Plants must run the gauntlet of destructive insects, not to speak of being destroyed by large animals or by man. Out of thousands of seed or wild seedlings only one or two may reach maturity. Then too some plants grow only in certain situations. Plants accustomed to the shade of the forest are destroyed when the forest is destroyed. Others are destroyed when wet places are drained. Then again some plants are very resistent; they are commonly called weeds.

Somewhat similar remarks may be made regarding wild animals. Some of the lower animals lay thousands upon thousands of eggs and yet the destruction of the young is so great that only one or two reach maturity. Animals are constantly warring on each other. The weak fall victims to the strong; the strong may fall by a combined attack of the weak.

Cultivated plants and domestic animals tend to survive in proportion as man gives them protection. He plants seed at the proper time and at proper distances to avoid overcrowding, and he protects the seedling plants from destruction. His domestic animals survive in proportion as they are given protection. If left to nature they would quickly perish.

Compared to animals, man takes excessive care of his young, but in spite of all his care there are always some individuals who do not reach maturity. Many children are born under unfavorable surroundings; like plants in uncongenial soil, they do not flourish. Some perish on account of too much heat in summer or too great cold in winter. Many perish on account of insufficient food. In the slums of large cities the death rate among small children is terrific.

In the average isolated country home children are apt to reach maturity; comparatively few fall by the wayside. Many children have good health on the farm but the moment they reach school age and mingle with those who have more or less ill health or disease difficulties arise. We all know how on the opening of school the acute diseases of childhood, notably measles and scarlet fever, at times become epidemic. This is the time too for colds and catarrhs and all kinds of disturbances, many directly traceable to unsanitary school conditions under which children are massed. School children are like plants massed in a hothouse: great care is required to keep off disease. Farmer boys, like trees taken from the forest, do not tend to thrive in the city. They may drift from one occupation to another and still complain. Out of the hundreds of country boys who try city life only a few succeed. We hear of the successes but not of the failures.

In the forest a tree is apt to grow up tall and slender, with a smooth bark. A tree transplanted along a city street receives all sorts of injuries, the bark soon becomes disfigured and scarred, the tree itself becomes gnarled and decayed at heart. A child in its rough and tumble plays may receive all sorts of bruises and injuries, leaving scars. Infective matter produces inflammations and is followed by scar tissue. Scarring is especially common where people are massed closely and where infection readily goes from one to another, either by contact or through food or water or through the air. Children growing up under isolated country conditions and not constantly coming in contact with infection are apt to grow up well formed, with straight limbs and good vision,

like the Indian.¹ On the other hand, children growing up in cities, especially in the slums, where sanitation is neglected, are apt to be deformed; they have all sorts of defects; many have an old age look.

The bodies of slum people, both old and young, when examined at city hospital morgues, often show all sorts of acute inflammations and the scars of old ones. Some are described as "pathological museums," meaning that like the gnarled tree along the city street there has been a many-sided contact with destructive agencies.

When we examine children, as in a medical inspection of school children, we may find all sorts of disturbances. We may speak of a pathology of the living. Pains and aches can not be seen, but we can see the effects or results of inflammations. Thus, looking down the throat, we may find it full of abnormal tissue, some in active formation and some as scar tissue. On account of the difficulty of air getting through the nose, there may be mouth breathing. On account of the nearness of the eyes and ears to the air passages where infection is constantly passing, there may be all sorts of disturbances of vision not to speak of disturbances in the sense of taste and smell.

In a general way, it may be said that health is a product of the country. Ill health on the other hand is due mainly to the massing together of people in towns and cities. God made the country and man made the town. Our towns are usually so unsanitary that there is a great deal of preventable ill health and disease. Here again we may draw an analogy between human beings and plants. Plants growing in isolation are healthy but in proportion as they are massed disease is apt to get among them. The florist watches

¹ At times one's work passes into one's dreams. One may also lie awake at night thinking over one's work, not to say dreams. In the early moraing hours of August 24, 1911, I had a vivid dream in which I saw an Indian and a white man on the plain (or perhaps I was looking at a picture of such a scene, a Remington drawing, perhaps). Both men were looking into the distance. The Indian stood up straight and tall, shading his eyes with his hand. The white man was slightly stooped and slightly twisted his head as though he were trying to focus both eyes alike—after the fashion of the school boy who twists his head to get an equal focus on his book.

The underlying idea of course was this: The Indian had good eyes, the white man's eyes focused unequally on account of a defect, the defect being due to his (former) mode of life and having had infection pass from the nose to the eyes and slightly altering them.

for epidemic diseases that threaten his plants, his knowledge enables him to raise fine plants, while the housewife may fail to winter over her single houseplant.

Only a few weeks ago I visited a farmer who has a "Seng patch." Several years ago he found several ginseng plants in the woods and planted them near his home. The next year he got a number of seed, the year after he had a large number. He then decided to make a regular plantation. The plants, several thousand, were close together, entirely different from the conditions under which they grow in the woods. After several years he suddenly discovered that some disease had gotten into his patch which attacked the roots and killed the plants. When I visited the patch he lamented the fact that his plants were dying and he did not know what to do. I pointed out how the physician sees a similar condition of affairs where people are massed densely in slums of cities. Diseases readily go from one to another. The proper remedy is to get out, to get more breathing space. He saw the application at once, that patches should be smaller and that plants affected should promptly be taken out so that others will not be attacked.

One may go a little further and explain to a farmer that perhaps a few of his ginseng plants may survive and that by taking seed from these and cultivating he may in time produce a disease-proof ginseng plant, just as we have rust proof oats. But such an explanation may not appeal to the man who is losing a valuable crop.

The evolutionist might say that nature is experimenting on a large scale in producing a "disease proof" strain of man by eliminating those not adapted to their surroundings. But such an explanation does not appeal to parents; they are not interested in future generations but they are greatly concerned in raising their children. They see the importance of altering the environment to make the conditions for their existence favorable.

Even the physician under the present mode of practice is not concerned with the future, only with the present. Is it not true

that the people usually come to him only for a "little medicine"? The matter of health supervision and looking ahead is in its infancy.

To what extent can the physician speak more or less positively regarding the future to a young man of the kind here under discussion? To what extent will he take special pains to instruct bright young people how to maintain good health, to reduce symptoms of ill health to a minimum? By using illustrations and analogies like the above they may be led to understand why their ills are not curable by the use of medicine.

As already mentioned, this patient was well developed. The only visible inflammations and scars he had were in the air passages. The back of the throat is a better guide to the physician interested in air conditions than the tongue; dilated capillaries and distended mucous follicles tell tales. A "coated tongue" is common in people living under unsanitary surroundings. Some patients think they are neglected if not asked to "stick out your tongue."

I explained his ill health, his attacks, as a reaction to bad air conditions, that he had no definite disease. But to what extent shall the physician tell of the possibility of real disease coming on —that nose and throat manifestations may later present themselves in the lungs, in the stomach, or in the cardio-vascular system? Physicians well know that an acute pulmonitis or gastritis or nephritis may follow a cold. To what extent do physicians speak of these things? It depends on the physician and on the patient; a doctor is not necessarily a teacher, and there are people who do not want to know or learn.

What will be the outcome? Perhaps in the course of time there may be so much scar tissue that there will be no longer any complaint of an irritable throat. Scar tissue lacks sensibility. Then the presence of infection may manifest itself elsewhere and perhaps differently. It is interesting to watch the development in the course of years—but unless a patient reports the physician is left in darkness as to the outcome.

The following is another illustrative case report taken from my

paper on Dust, A Neglected Factor in Ill Health. The case is that of a middle-aged housewife living in a clean part of the city and very seldom going to the heart of the city or into crowds because of attacks of ill health that follow. She belongs to that class of women who are called peculiar. When we study such cases we may find that the reason people are considered "peculiar" is quite simple.

Mrs. S. Middle-aged housewife. History of frequent headache, vague wandering pains in extremities and chest; at times the pains are severe. accompanied by a disturbed stomach and an irritable bladder; attacks last a few days. Says she gets sick after going to church or to a party, and also gets sick on sweeping in the house. This patient dimly recognized the influence of dust, as I soon learned without asking any leading questions along the line of dust infection. She says that formerly she could not take a ride over a dusty road or in a street car without getting ill; she goes to church or to a party only at times when all the doors and windows are open, and even then she does not always escape.

This case belongs to that class of women who regularly have a "Blue Monday," the result of house cleaning on Saturday and attending an ill ventilated church on Sunday. After the source of the "blueness" is pointed out, many women get along in comfort without any special medication.

As may be surmised, I promptly tried to explain that she was a dust victim. As mentioned, she herself had noticed that dust affects her, but she could not distinguish between kinds. She could not understand why she should be so sensitive and why her husband, working under bad air conditions, was "thoroughly healthy." He did not complain although he had some catarrh; she did not consider this a disease because "Everybody had catarrh." She herself had transient mucus formation only after an acute exposure.

When she first came to me she complained of pain in the chest and expressed a fear of consumption; at the same time she told me she belonged to a long-lived family and that there was no consumption in her family. Some time later she complained of pain in the stomach and then expressed her fear of the possibility of cancer, but again denying any such disease in her family. Why do some people always look for the worst? (Some physicians do the same.)

There may be various explanations why she had a "good family history," and why she complained much of ill health, while her husband did not complain. I explained it in this wise: Her husband came direct from continental Europe where his ancestors for ages had been exposed to unsanitary city conditions and where the weeding out on this account was severe. He might be considered as a survival of the fittest, able to live under more or less unsanitary surroundings. Her own ancestry goes back to the mountains of the south where under simple life conditions people flourish and where there is little weeding out on account of unsanitary conditions and disease. Practically all children reach maturity and leave offspring. When the descendants of these mountaineers come to live under unsanitary city conditions the weeding out process promptly becomes effective. But such individuals may escape premature death by getting out in time or by avoiding surroundings or influences that produce symptoms.

This patient had a "good family history" simply because her ancestors had not been exposed to the cause of ill health and disease. She herself is reacting to the "diseases of civilization" because exposed to them. She largely avoids ill health or disagreeable symptoms, however, by staying away from the heart of the city where air is bad.

One day she expressed her belief that she would not live long, that she would die before her husband. At that time (1904) I only dimly understood how men who complain little may go to pieces suddenly and prematurely, but on the other hand I knew that "old chronics" tend to live on and on. Merely to console her, I told her how old chronics by being prudent live on to old age, their symptoms are constantly warning them not to go to extremes. At that time I did not realize that men living under highly unsanitary air conditions may and do react, although they may not complain or at least not to such an extent that they will consult a physician, that instead of having all sorts of aches and pains, colds and coughs, derangements of the alimentary tract or nervous system, they (the body) may react by an increase in the blood pres-

sure, and that they may fail suddenly and prematurely, as from an apoplexy or from Bright's disease. I may here add that since then I have had a number of somewhat similar cases and at times it has been a problem to what extent to make explanations to a "sickly wife" so she does not worry on account of the "too good health" of the husband, when it is the husband who is in danger of dying first.

This patient was kept under observation for several years. The idea that she was a dust victim was fully verified. She is alive today and has better health than she had for years. Her husband died suddenly a few years ago.

The reason some people live retired in town, perhaps on the very edge of it, or live retired in the country, and are considered peculiar, may not be far to seek in the light of such cases. The woman, like the farmer boy just cited, had learned something about her limitations and tried to live within them. But she did not know just where the danger lay—I was able to point out the neglected factor. Perhaps the reason a certain class of individuals are always on the move further west, feel crowded when another settles within a mile of them, is an extreme form of sensitiveness to "crowd poison."

The Arab of the desert is said to be so sensitive to the odors of towns that he does not enter them. Perhaps he has noticed the after-effects and avoids them. People who have much catarrh and altered nasal membranes may be wholly unable to detect odors. The extent to which the inhabitants of some of the small towns tolerate odors arising from neglected streets is remarkable. The two preceding case reports as originally given were brief; they were "illustrative case reports." There was nothing said about a "cure."

Now when a physician promptly "cures" a patient of some acute or specific disease, the case report, if he reports the case, may be very brief and to the point, but when an old chronic has been with a physician for years (greatly benefited but still uncured) it becomes a problem what should go into a case report or history.

There may be a great mass of data. In writing a volume it becomes a problem what to include and what to exclude; opinions may differ greatly. A weekly or even a monthly note in the course of years might make a volume. That matters of interest to one may not be of interest to others is of course self-evident. Indeed case reports by physicians, which usually relate to diseases rather than to ill health, differ greatly. On the one hand are those given in scientific journals of limited circulation: they may be so dry, "dry as dust," that few read them. On the other hand are those written more diffusely for the popular medical journals. As a rule case reports given in books are very brief and lack all human interest matter.

Somewhat similar remarks apply to biographies. Few are written so that they will hold the interest of the general reader; most of them are written by specialists. The life of a musician is usually written by a musician; the life of a scientist by a scientist. The life of a literary man, full of literary criticism, may appeal to comparatively few only, more popularly written it may appeal to many. The biography of a man or woman of varied experience appeals to most of us. The biography of a man or woman who had much ill health may appeal only to those who have apparently similar ill health. Case reports here cited may be considered as brief or partial biographies of people in ill health or they may be considered as a chapter out of their lives.

Of the two case histories given, the first is that of a young farmer living in isolation; the second is that of a middle aged housewife living in isolation near the edge of town. Here I shall give the history of a young woman who has an indoor occupation in the heart of the city. She is relatively immune. When on a vacation or during idleness she has the "best of health." The case report is simple, written with more or less human interest matter.

CASE OF MISS —. A young woman who first came to me in 1902 and has been with me ever since. This patient reacts only when

air conditions are very bad, being able to withstand a large amount of infection, or in other words live in spit dust air. She belongs to a long-lived "weeded-out" family, her parents coming from a part of Germany where wars were frequent. We know what crowding into fortified cities meant: the death rate was terrific on account of overcrowding, bad water, insufficient food and bad air. It was the "survival of the fittest" who when wars were over went into the country to repeople it.

Her home is in a part of the city where air conditions are relatively good. There are five brothers and sisters living, several having died in childhood. One of the living is quite susceptible and is constantly subject to dust infection, and it would seem that it was mere chance that this one survived. I can readily see how if there were removal to bad air conditions weeding out would promptly take place. Moreover one of the brothers for several years was exposed to bad air but he held out fairly well; since then he has lost his immunity and now complains after the least exposure.

I shall run over my notes very briefly. And I may here say that when she first came to me I took few notes on her common colds, as I already had many case reports of this kind. Often it seemed a waste of time to take notes on additional "Simple Cases." On the other hand during the last few years the patient has largely been able to avoid colds and ill health and in case of an attack took the remedies recommended, without consulting me. At present she consults me only for things out of the usual. Even the simplest case in the course of time is apt to give one interesting data.

Before this patient came to me she, as well as other members of the family, was constantly running to the doctor for every little pain or ache, to be handed a bottle of medicine or a box of pills. When she began to realize what the symptoms meant and to what they are due, she became indignant at the practices of "symptomprescribers." It should be said that this patient has a clerical position and has changed offices several times and according to whether the office is sanitary or not, that is, whether the air conditions are good or bad, there is little or much complaint.

In 1902 when she first came to me she was complaining of a deranged stomach, with backache and dizziness. She was working under horribly bad air conditions. I promptly ascribed her ill health as a reaction. As she was a sensible young woman I fully advised regarding good and bad air. By reducing the length of time in bad air and increasing the time in good air, there was improvement.

Early in 1903 she was greatly run down, anemic, with a weak heart action and puffiness under the eyes and complaints of dimness of vision. There was also complaint of a deranged alimentary tract. I explained to her that evidently she was "full of infection" and advised the pure air treatment, remaining under good air conditions as much as possible. But just then her work required much time indoors under bad air conditions; the symptoms continued until the open door season was well advanced.

In 1904 just before the open door season there was again great complaint, clearly due to bad air. When my paper on Dust, A Neglected Factor in Ill Health appeared, I gave her a copy and she then gave me a number of observations, especially of times previous to coming to me, of attacks that she now clearly traced to bad air, as going to the skating rink where the floor was covered with powdered pumice stone which settled over everything. The sharp gritty matter was of course mixed with more or less infected matter and for this reason purulent catarrhs were quite common. We had a discussion regarding the amusements of a small town, how few there are and when anything does go on the people are apt to go frequently until the novelty wears off or until they notice bad effects. A number of my patients began to realize that they had bad health on account of attending polo games at the skating rink.

In the fall of 1904 while attending the State Fair she got a "bad cold" that lasted for six weeks. This cold was complicated

by a sore foot. On inquiry I got first a history of very bad air conditions at the Fair with its large crowds, with practically no ventilation in some of the buildings. It seems buildings were kept closed to keep out the clouds of dust, and that meant to confine the dust produced inside, especially the spit dust. Regarding the sore foot, I learned that when she was nine or ten years old she sprained the foot and that for several years it was sore but she gradually got over it, the pain returning during this "State Fair Cold." At times she complained greatly. Locally, air conditions were very bad at this time on account of dry weather, and she continued to complain until rains set in and cleared the air, and, more important, washed away the accumulated filth from the streets.

Early in January, 1905, she had a severe cold which assumed a continued form and annoyed her very much up to the open door season. There was much soreness in the chest and general aching throughout the body and the foot, with of course sore throat, headache, deranged alimentary tract and general weakness—one might almost term it nervous prostration. The air conditions at the time were bad with little chance to increase the hours in good air. The pain in the foot was especially marked at "darkest before dawn." In midsummer (1905) there was an attack of dust infection with deranged stomach, clearly traceable to "indoor climate" under dusty air.

She was a good observer and told me of a number of her observations. Thus, with the return of the closed door season one of her fellow-workers went to a polo game and the next day had a bad cold. Games were played twice a week and when the next game came she again went, and that "did her up" to such an extent that she had to remain at home several days, then when she did return she was scarcely able to be about and was very annoying to others in the office on account of her coughing and complaining. My patient was very indignant. She said she tried to explain the matter to her but got scant attention, perhaps some ridicule. It is the old story of people not believing in the injuriousness of dust. As a matter of fact many of my patients realize that it is difficult

to explain and so they do not even attempt it. It has frequently occurred that some patients would not even explain it to their own relatives. (In this connection see case of Miss —, p. 202.

Early in 1906 and up to the open door season there was much complaint of periodical headaches. For a time she remained at home entirely and during this time had "good health."

She has frequent occasions to be at the Court House and after the election in November, 1906, described to me the condition about the Court House where there had been an election booth. The spit conditions must have been awful. This was an acute exposure, followed by an acute cold, which kept getting worse until she finally came to consult me.

In January, 1907, she was complaining greatly of aching all over, of having a peculiar feeling "as though getting rheumatism." The pain was first noticed in the sprained foot, gradually spreading throughout the body. I have a short note referring to a consultation regarding the onset of this prolonged attack, that it was due to going to a polo game but that for a time she concealed this fact from me from fear of ridicule—it is the old story of expecting to hear "I told you so." I may add that the "rheumatic sensations" were most marked in the forearms; one might almost regard it as an "occupational disease;" she was manipulating the type-writer most of the time.

It is customary here to explain many obscure attacks of ill health not otherwise explainable as due to "grip," and when one day she came in it began to look as though she had "real grip," that is influenza. The general symptoms gradually subsided. At "darkest before dawn," that is, the middle of March, she came in on account of her foot which continued to annoy her. She said she had an idea what I would say regarding treatment: that I would advise a change of occupation, to get into better air. But she did not see her way clear to do this, and hence did not come in to report; she now came only because a sister urged her, saying she would get no further sympathy unless she did so. This continued attack was traceable to handling large dusty abstract rec-

ords, thick with dust and in a room that practically had no ventilation. She clearly recognized the relationship of cause and effect and knew that as soon as the open door season arrived she would get better. Moreover the filth conditions in town were very bad at the time; there was no street cleaning and filth accumulations were held by snow and ice. This filth and attendant dust (dust on sidewalks and in stores, tracked in from the thawed mass on the streets) went out suddenly with a heavy rain and health conditions improved. She herself improved as soon as the open door season arrived.

For the last three years I have seen little of her because she has learned her limitations and tries to live within them. She realizes the uselessness of medicine in effecting a permanent cure and its limited influence in acute attacks, and yet she does not go to the other extreme of *laissez-faire*. She knows that many symptoms can be modified by the use of remedies.

There are a number of incidents that might be mentioned along with a number of her observations but here I have room for only a few.

One day in discussing "Tax Payer's Colds" she told me of speaking with an old farmer who came in to pay taxes for a number of his neighbors. It was during the height of tax-paying time and it required several hours to get through at the court house, and that meant that the long line of tax payers had to wait. I can testify to the horrible spit dust air conditions prevailing at such times in a small room full of tobacco-spitting catarrh-afflicted men. No wonder people have "Tax Payer's Colds."

One often wonders to what extent one's "preaching" regarding the dust evil and the importance of clean air is productive of results. I have been preaching so often and so long that at times I feel almost ashamed to bring up the subject. But sometimes one gets evidence that there are results. Thus one day my patient told me of visiting a neighbor who had a "bad cold." She had just

¹ Her employer was constantly reacting to bad air without however realising it. He continued to go to the office and went from bad to worse, until he finally placed himself in the hands of a surgeon but alas, too late; he fills a premature grave.

returned from a trip to Chicago. Rather to my patient's surprise she said in a matter of fact way, "I guess that is one of Dr. Hessler's dust colds." I did not know the woman.

By way of summary one can say that here is a young woman who at times has "common colds" which under bad air conditions "hang on." Coryza at times may be very marked and then again absent. At times there are dyspeptic disturbances; one can speak of her as a dyspeptic. At times again symptoms referable to "nervous prostration" occur. All these symptoms are dependent upon bad air, or to be specific, on spit dust, as verified over and over.

There is one other point that might be mentioned. The patient regretted that the history of a relative can not be given in this connection, one very susceptible to exposure to bad air, quickly manifested by irritable respiratory membranes and enlarged lymphatics. "Catching Cold" occurs immediately and colds hang on; at times there may be great systemic disturbances. It took a long time for this relative to learn to live within limitations. People, especially young people, think they ought to be able to do as others. For instance, after having good health all through the summer with free ventilation, the going into the first social gathering or theater in the fall brings on a prompt reaction. Or, again, during the closed door season after having had good health by living in isolation for some time and then going out, perhaps only to do shopping, ill health comes on.

In discussing the "Air of Places" with an observant patient of this kind, one may get all sorts of information regarding comparative air conditions, varying from good to very bad. The subject will be taken up subsequently. It may here be said that it can be looked at from two standpoints, locally and generally. What kind of air do we encounter in our daily life at home? on the street car? at the office, shop, store or factory, at places of amusement and recreation? And on the other hand what kind of air do we find in travelling to distant countries? Unless our attention is called to it, to what extent do we consider air conditions under which we live?

Formerly she became alarmed at every little pain and ache. Her physician, inherited, so to speak, from her parents, was of the simple prescribing kind; he gave out medicine on the merest statement of symptoms and with never any general advice. He was truly a "medicine man." She now clearly recognizes the relationship of cause and effect, but being compelled to work for a living she can not choose air conditions to her liking. As a consequence she must suffer more or less. One may say that if the community took an interest in sanitary matters, especially in giving people good air, she would have "perfect health."

The amount of bad air and infection she can bear is really remarkable. She clearly recognizes this (especially when contrasting herself with a relative who is very susceptible) but feels confident that at times if the exposure were a little worse or longer continued, she would break down. As a well-known young woman and valued friend, I can not here go into further details nor state facts on which conclusions are based.

Cases where the relationship of patient and physician, or physician and patient, did not last long are very common. The length of such relationship is often determined by what is called tact. Deliberately to call attention to what might be regarded as "untidy housekeeping" (in the following case not really so, because the house was old and high winds stirred up things) is usually considered highly offensive, just as pointing out untidy and unsanitary city conditions is apt to give one the reputation of being a "knocker." A physician has "smoothest sailing" by keeping still and merely giving what is wanted, medicine.

During 1902 I made many visits to people at their homes (I had an automobile, the first in town), but I soon abandoned this. Although one sees many cases one is not apt to take many notes, one may be too tired to write.

One day while visiting a patient a neighbor called me in to see her old mother, whom I found had "winter cough of the aged." I wrote her a prescription that was indicated, to palliate. The next day she again asked me to stop in, her mother was worse, "coughing harder than ever." She wanted to know whether I had not given the "wrong medicine."

On my first visit I had laid my medicine case on top of the dresser, the only furniture in the room besides the bed and two chairs. I did this again the second day, when I noticed that there was a heavy layer of dust on it. I drew my finger through it, tracing d-u-s-t. I at once saw why the old lady was "coughing worse than ever;" there had been a strong wind storm all night and the dust had been blown out of cracks and crevices of the old loosely jointed flooring; naturally the cough was aggravated. I explained that it was not the medicine that aggravated the cough and then I pointed out what I had traced on top of the dresser. The daughter was greatly offended and I was not called into that house again—perhaps if she sees this volume she will understand the relationship of cause and effect. A heavy layer of dust on furniture is good evidence that dust must have been inhaled. It is in the air before it settles down.

SEASONAL FACTOR. This is an expression I constantly use in explanations to patients. It refers especially to the open and closed door season. In the summer time there is free ventilation and infective dust on streets and sidewalks is sterilized by the bright rays of the sun. In the winter time on the other hand doors and windows are closed, people house themselves closely. When the sun is low in the horizon or hidden by clouds, infection remains active. Filth tracked in remains virulent for a long time. Many ailments are seasonal. Dust infection is most prevalent during the closed door season.

DARKEST BEFORE DAWN. This refers to the time when dust infection is at its height, on the close of winter. This is the time when patent medicine advertisements are at their maximum, when the doctors are busiest and the sick most commonly make a change, going to some new doctor or trying some new nostrum. An individual may have been complaining all winter and then tries a new

doctor or a new medicine and in a short time improves, on the return of the open door season (seasonal influence). Many people have a distinct idea that they get better every spring, no matter what they take. Unfortunately the remedies that "bring back health" in the spring are unable to maintain health on the return of the closed door season. Many have an idea that the blood needs purifying in the spring, they take a "blood purifier." Some farmers on poor soils where sassafras grows come to town and sell sassafras root. Greens also have a reputation for being "good for the blood."

The Neglected Factor, the Missing Factor, or the Common Factor are other expressions frequent in my case reports. What they mean must be self-evident to the reader by this time.

IV.

COLDS AND CATARRH.

Everybody knows what a cold is because practically everybody now and then has one. Catarrh is also very common, indeed some believe that "Everybody has catarrh." As a matter of fact some people are very susceptible to colds and catarrh, others quite resistent; conditions must be very bad before some are attacked, that is before they react.

Colds as we all know are most prevalent during the cold or closed door season. Many believe that colds and cold are related, but when we critically study a large number of cases we may come to the conclusion that there is something else at bottom. Colds and catarrh like everything else of course must have a cause. In the absence of a cause there will be no effect. Because of the belief that "Everybody has catarrh" many fail to make an effort to find out the reason. If people went to a country where catarrh is not common they might be induced to ask themselves why it is so common at home. Then perhaps they may see that Dickens was justified in speaking of "American Catarrh."

The terms cold and catarrh are old names and of indefinite application. They correspond to such names as tree or house. There are all sorts of trees and there are all sorts of houses. The same criticism applies to many other terms that are used in regard to symptoms of ill health and disease. A physician may spend much time in attempting to learn what his patients mean by certain terms.

The terms cold and catarrh are often used interchangeably. Some speak of catarrh when others speak of colds. Then we hear of colds changing into catarrh, and chronic colds are referred to as catarrh. A patient may speak of a cold in the nose while his phy-

sician may call it an acute catarrhal rhinitis, literally an acute catarrh of the nose. The physician likely speaks of a cold in the throat (manifesting itself also in the nose) as an acute coryza, if not as an acute pharyngitis or laryngitis. Both physician and patient recognize the fact that there is an irritation of the mucous membranes with the formation of more or less mucus. The term catarrh primarily means a flowing down. One can readily understand why a cold characterized by the production of much mucus should be called catarrh and similarly why continued colds should be given the same name.

An irritation of the respiratory membranes may be brought on by or through many substances. We know what happens when peeling strong onions, how the air passages and the mucous membranes of the eyes will be irritated. Those subject to "hay-fever" begin to react as soon as certain plants begin to bloom. People who inhale much dust, as for instance railroad firemen, have constant irritation of the respiratory membranes.

The tendency to catarrh is very marked in some individuals. Old physicians spoke of a catarrhal diathesis. Now and then we hear physicians speaking of "poisoned secretions." Besides the catarrh proper there may be all sorts of symptoms accompanying the mucus formation and perhaps in the end leading to all sorts of "diseases," as bronchitis, consumption of the lungs, dyspepsia, intestinal derangement, etc. Mucus may pass from the kidneys in the form of casts and be misdiagnosed as Bright's disease. The maker of a widely advertised nostrum or patent medicine says that nearly all ills and diseases are due to catarrh. There is certainly much truth in such a statement, but we must at once inquire, What makes catarrh so common in our country and why the need for so many advertised catarrh remedies?

We should keep in mind that there are two classes of catarrhs or colds, the infective and the non-infective, those that go from one individual to another and those that do not. Common colds and common catarrh go from one to another just as the seed of weeds travels from one field to another, while such affections as rose cold

and autumnal catarrh or hay-fever manifest themselves only in those who are susceptible. In other words, one does not "catch" hay-fever from another. The individual subject to hay-fever can go to a country where the particular pollen that affects him is absent and thereby escape an attack. But the individual who is subject to common colds and common catarrh is less fortunate; he is constantly coming in contact with people from whom he is liable to "catch" colds and catarrh. Colds and catarrh are more common in some communities than others. They are more common in the northern states where people are massed together than in the warmer southern states where people live more out of doors. For the same reason colds are less common with us in summer than in winter when people lead an indoor life.

"AMERICAN CATARRH." Europeans tell us that catarrh is much more common in our country than in Europe, an idea verified by our own countrymen who have been to Europe. I recall that as a boy I heard a recently arrived German immigrant complain, saying he suspected he was "getting the American catarrh." Charles Dickens in his Letters from America while on his reading tour complains of an "American Catarrh" and how closely it stuck to him. He also writes about the American spitting habit and here I believe we at once find the explanation. He used the terms colds and catarrh interchangably, now one and then the other. As already mentioned, European physicians speak of our Triad of American Diseases—catarrh, dyspepsia, and nervous prostration, and here again we can trace relationships.

KINDS OF COLDS.

A cold may be regarded as a reaction. Individuals react differently and there are different kinds of colds, as there are different kinds of causes. Some react very promptly and energetically, others scarcely at all. Some are very susceptible, others practically immune. Some require much exposure to the cause, others little. An organ or one part of the body may react more strongly than another; a cold may localize in some part of the body.

In this volume the term cold is used as a synonym for dust infection. Some dust victims very readily contract common colds while in others there may be a different manifestation, a disturbance of the alimentary tract, of the nervous or circulatory systems, etc.

I have in mind one of my patients who classified his colds according to the place where or the conditions under which he caught them. He was the son of a well-to-do farmer and came to me while in high school, years ago. While attending the common schools he had "school colds," with much coughing. In the high school he also had colds with more or less catarrh, that is more or less constant abnormal secretions from the respiratory mucous membranes. While attending college in a clean college town he largely escaped, but during this time he occasionally had "railway colds," "theater colds," "dance hall colds," etc. I was led to classify my own notes on colds under such and similar headings.

It might be added that he soon learned how to reduce attacks to a minimum and that his parents were subject to high blood pressure. His colds now tend to manifest themselves differently, that is besides common colds there may be a disturbance in the circulation.

The following list of colds is not to be regarded in the light of a scientific statement of facts; it is merely a practical classification of common colds. Out of the "fifty-seven varieties" I can make mention of only a few. The remarks are to be regarded as suggestive, to lead the individual subject to colds to ask himself how and under what conditions he got his cold.

ATTIC COLDS. Among my early patients was a middle aged housewife who occasionally went into an attic to look over old magazines and books. She would almost invariably have a cold afterwards. At that time it had not occurred to me to classify colds or I might have spoken of "attic colds," but I did speak to her about there being more or less infection in such dust, depending largely on the location of the house and the amount of infected dust carried or blown in.

I have observed similar cases now and then. About three years ago an elderly housewife whom I had sometime before accepted as a patient came in one day with a severe cold, saying she had had similar colds in years past. She ascribed it to draughts or to putting the hands into cold water. I promptly told her it was an attack of cold due to the inhalation of dust. She realized that she had inhaled dust freely from the fact that she had been spitting black. Subsequently she found it was more profitable to let somebody else do the cleaning up of the attic.

AUTOMOBILE COLDS. Patients at times complain of having caught a cold during an automobile ride. I at once inquire regarding the streets or roads traversed. One quickly discovers, assuming that there had been no exposure otherwise, that riding over dusty down town streets may be followed by a cold, but that this does not occur on a ride over country roads, dusty as they may be. Some individuals who can not ride about city streets (or in a railway coach) without getting ill can take long automobile rides over country roads and feel good afterward. It is sometimes said there is nothing new under the sun but the ancient Greeks certainly knew nothing of automobile colds, although the old Romans perhaps had chariot race colds.

Book DUST COLDS. These are apt to occur in the susceptible on handling old books and especially books obtained from libraries in the heart of a city, particularly old books that have rough tops which accumulate a large amount of dust. Sometimes people feel too ill to be about yet will lie on a couch with a book held above them. There may not only be colds and irritation of the respira-

tory mucous membranes but also irritated eyes, and then the spectacle man may advise the use of glasses. Some advertise "Examination free;" one wonders what such examinations amount to.

CARPET COLDS. A mention of carpet colds is frequent among my case reports. One may speak of varieties, as where a crowd of children visit the grandparents and fill the house with dust, or at a Christmas entertainment at a church with an old dusty carpet on the floor. Then there is the dust from carpets at the annual housecleaning. A carpet cleaning establishment sending clouds of dust into the air may be the source of continued colds for a whole neighborhood. It is strange that such establishments are allowed to exist in a town but they do exist where the people are negligent.

CHURCH COLDS. One of my newly accepted patients complained of having Blue Mondays, with more or less cold and cough and catarrh. She went to a church near the heart of a city that had an old dirty carpet on the floor. A physician never knows how people will take his remarks that reflect on their church going and so I explained in a round-about way about dust infection. also how people get colds and all sorts of disturbances on going to a poorly ventilated theater. She promptly said she did not believe in people going to theaters; it served them right if they got sick. Such a remark is a straw that showed her attitude regarding theater going and church going. Now a physician after he has seen a large number of cases of a certain kind and does not care about having more of the same kind may speak plainly. his explanation is accepted in the proper spirit he may accept the applicant as a patient; if not there will not be established the relationship of physician and patient or patient and physician. I promptly told her I believed her Blue Monday was due to going to church on Sunday. She was at first inclined to deny it but she agreed to observe. Occasionally remaining away from church soon convinced her that her attacks were "church colds." It may be added that this really is one of the most serious kinds of cold. from the fact that many people, especially old people, think they

must go to church. Physicians are often accused of being materialists; we can readily understand why some physicians if they insist that advice regarding physical health be followed, will get such a reputation.

COURT-HOUSE COLDS. A large chapter could be written under this head. From the fact that in the average county-seat the court-house is a sort of social center for men, that the court room often is overcrowded, one can see how colds are carried from one to another. Then too clubs and societies and associations may use the court room as a meeting place. Teachers' Institutes are often held there. Sometimes members of a church who have no building of their own may meet in the court-house on Sundays. Then too we must consider the officials who all day long inhale court-house air, usually pungent with the odor of tobacco, not alone of smoke but also of quids; some bear court-house air without complaining, others complain greatly.

Court-house air is especially severe on the retired farmer who comes to town and has little to do.

Dance-Hall Colds. Dance halls differ widely according to their location and the kind of people who visit them and their air conditions. A clean, well-ventilated dance hall with a waxed floor and with the dancers coming in carriages is a vastly different thing from a dance hall with a rough floor to which women come with their street dresses that have trailed over filthy sidewalks. When the hygienist advises dancing as a healthful exercise he likely has in mind open air dances or at least a hall that is clean and well ventilated.

A physician can never be sure how fully his advice is followed; some patients live up to the letter but not to the spirit of his advice. One of my patients, for instance, who frequently went to dances and as a consequence had continued colds and sore throat, discontinued dancing but still went to dances as a "wall flower." The simple injunction, "Do Not Dance," is not sufficient; one must say, "Do not go to dance halls," meaning of course those where air conditions are objectionable.

Space forbids enumerating the many different kinds of colds on which I have notes, but I want to make mention of a few additional ones.

Housecleaning Colds. These are very common, especially among housewives. There are two periods when they prevail, at the annual spring housecleaning and at the fall housecleaning. It is customary to have a thorough housecleaning, perhaps a renovating, in the spring, with a minor one on the approach of cooler weather. During the summer the housewife, in fact the household, may have had good health; doors and windows were open, there was free ventilation. Then come the cooler days and doors and windows are closed, ushering in seasonal ailments, aggravated by the fall housecleaning. Some people have colds and catarrh all through the winter which reach their maximum with the spring housecleaning. Then comes a period of good health or at least improved health. The husband usually escapes housecleaning colds, but if he helps, as taking up the carpets, he too may suffer.

RAILWAY COLDS. I have already referred to the fact that some people can not take a ride in a railway coach without getting ill. This is especially true during the cold season of the year. But when one critically studies the subject one finds a marked difference in railway coaches. We need only consider the kind of air to be found in a Pullman coach and the kind of people who use it, and on the other hand the air of a smoking car on a small local train, patronized by the tobacco chewer and spitter, with an odor so overpowering that many men will not enter it. Besides infective dust proper there is of course the cinder dust from the locomotive and the dust stirred up from along the roadbed.

It is sometimes said that air conditions of trolley cars are superior because there is no smoke and no dust from cars ahead, but according to my observations more spitters travel on trolley cars than in day coaches of through passenger trains. Moreover many railway companies have a very efficient system of ventilation. Although smoke and cinders come in, yet there may be prac-

tically no infective dust. From personal experience I know I can travel on clean through passenger trains (not being a smoker I never travel in a smoking car) with comfort but I can not say the same of the average trolley car. I have a lot of data from travelling men who observe conditions. They say the man who spits tobacco juice travels by the cheapest mode; that means he travels in a trolley rather than in a through passenger coach or in a Pullman.

School Colds. These are especially important. A child may have had good health up to the time of going to school, then there may be a succession of colds, if not constant colds. Moreover the colds are brought home to the other children and to the mother. The fact that the specific diseases of childhood are disseminated at the school house is well known. Parents are likely to keep their children at home at times of an epidemic of measles or scarlet fever. That colds are similarly distributed seems to be known to but few parents. Cleanliness and thorough ventilation are the best preventative, not only of school colds but also of the common diseases of childhood.

School colds form a frequent subject of discussion with parents. Often when parents learn why their children or perhaps an only child has so many colds and so much continued ill health they become indignant. When unsanitary school conditions are pointed out, they exclaim, "They ought not to be allowed to exist." Of course not but who is to alter or prevent? "Well, the teachers ought to look after the matter." So they ought; but we know they do not. "Well, the School Board ought to look after it." True, but the fact is they do not. "Well, the Board of Health should compel the school authorities to make the school sanitary." Of course; but as a rule such Boards fail to do so—why? Because the people fail to look after health matters and fail to support and endorse the local boards of health.

People often find it difficult to realize that health matters are in their own hands, if they would only act.

Some parents send their children to school and then leave everything to the teacher or the authorities—our ex-President calls them "Cuckoo parents."

Similarly we find people who "leave everything to the doctor." The physician ordinarily discusses things medical only with those who come to him. In the preparation of this manuscript I asked the opinion of people who do not or only rarely come to a physician. I found some who openly told me they were not interested in the matter of ill health and disease and causes; if they did need the services of a physician they expected to place themselves in his care and let him do the best possible. This at once brings up the question of what is the best possible? How can a man know unless he gives personal attention? How can we know that the school authorities are doing the best possible for the child? There are any number of details apt to be overlooked unless there is personal interest.

VACUUM CLEANER COLDS. Kinds of colds, as here described, are almost endless; every now and then one finds a "new kind." At times one may see reason for some kind to occur but it may take a long time before an actual case presents itself. For instance, within the last few years vacuum cleaners have come into common use. At the one extreme are household machines to which neither sanitarians nor physicians can find objection, while at the other extreme are those that are highly objectionable, with a very coarse filter that retains only the coarse particles and allows the fine dust to go through. In a closed room the air may be densely filled and those in it may react.

For a long time I had no data on such a kind of cold. My first notes relate to a poor woman with a cheap machine who goes about cleaning houses, especially carpets. Her health quickly declined, in spite of the fact that "her doctor" had told her the exercise of using her hand-power machine would be good for her. He failed to consider an important factor, one on which I myself insist in discussing ill health with patients.

X Colds. After patients have learned to classify their colds according to the place where or the conditions under which caught, they at times vainly try to account for every attack. But at times it is almost impossible to trace the source. Then some patients want to discuss probabilities; they often forget that a physician's time may be quite limited and he may then have no time for discussion or perhaps no inclination—the subject may be old to him.

For convenience of classification and explanation I have a name for colds whose origin can not be traced, X Colds, meaning a cold of unknown origin.

But one must use such an explanation sparingly. It is similar to many in common use, as the very name "cold." Is it not true that when a patient is told he has a cold he ceases to make further inquiries, he assumes he knows, just as he fails to inquire when given the "explanation" dyspepsia or nervous prostration? Some terms conceal ignorance. We should inquire the why and the wherefore.

At times the cause of an X Cold may be found. For instance, one of my patients living in the country had acute attacks at times when she did not come to town. The attacks were mysterious until it was found that she was in the habit of cleaning dresses that had been trailed over filthy sidewalks. That is where she got the infection. It was no longer an X Cold. In such a case should one apply a definite although clumsy name, Dress Cleaning Colds?

Under What Conditions Does One Catch Colds? In attempting to answer such a question one would have to ask, Under what conditions does one not contract colds? The city men who write the books speak of the importance of physical cold, of getting chilled, of sitting in draughts, or getting the feet wet, of hot, dry air, of being insufficiently clothed, and of similar "exciting causes." The country doctor who sees people who are not constantly exposed to infected dust may find that such an exposure may or may not be followed by a cold; it depends. The farmer may expose himself in all sorts of weather and yet have no cold—and then

some day he goes to town and breathes a lot of bad air and then any "exposure" promptly brings on a cold.

According to my own experience, I can expose myself to all the commonly accepted causes of colds without contracting a cold, provided I have not been exposed to infected dust for twenty-four or more hours. For instance, last fall when the weather was quite cool I one day worked in the garden, that is how I get my physical exercise. Soon I began to perspire and then I drank a lot of cold water and that brought the perspiration profusely to the surface. my shirt was wet. A rain storm came up and I was soaked through. Then while still warm from the exertion I took a cold bath, and for a time was exposed to a strong draught going through the upstairs rooms; I was taking an air bath after the fashion of Benjamin Franklin. My supper was eaten rather hurriedly; under good air conditions I am apt to bolt my meals. After reading the evening papers for an hour or so, I went to bed. The next morning I arose feeling fine, not the slightest evidence of a "cold" after all this "exposure."

In cold weather when the temperature is below zero I at times go out with very thin clothing. Of course I feel cold and it feels good to get back into the warm room, but there is no after-effect. Now for the other side of the story.

I live on the edge of town on a four acre lot, under what must be considered good air conditions. For the last year or two I have been exposed to bad air only occasionally, as by going into the heart of the city say for an hour or two. On going down I feel perfectly comfortable but when I get back, after inhaling a lot of infected dust, I have a feeling as though not warmly enough dressed and a similar feeling that the house is not sufficiently heated, and then if I am not "careful," that is in avoiding the commonly accepted causes of colds, as those just mentioned, I am apt to have a cold, perhaps a "bad cold."

I have numerous notes relating to conditions under which I do or may contract a cold and under what conditions I am apt to escape, and yet I do not claim to know all about colds. Being subject to colds but not to attacks of dyspepsia or of "nervous prostration," I can not speak about these latter. I did however have one dyspeptic attack in the fall of 1908 when returning from the International Congress on Tuberculosis, at Washington. I was in a Pullman sleeper with every berth taken. Evidences of a deranged stomach promptly appeared and did not fully disappear for two or three weeks. Had I been more susceptible I might earlier have understood patients who complained of dyspepsia, but on the other hand had I been more susceptible likely I would not have passed through medical school at all and would not now be writing as a physician.

I have a number of notes on patients and from friends who have been experimenting to find out under what conditions they contract colds. A professional man who is fond of hunting had noticed that it makes a difference how he goes to the hunting grounds, whether he walks out or goes in a buggy or automobile or goes by train. If the latter he must be very careful not to get chilled or break through the ice, because then he is sure to contract a cold, while if he did not inhale infected air he will probably escape a cold.

Another professional man who takes an occasional hunting and fishing trip to the north has learned that while in the wilderness he can do almost anything, expose himself in every way, indeed eat all sorts of food, without having a dyspeptic attack or complaining of symptoms of dyspepsia. What would be a "throat cold" in others in him manifests itself as a "stomach cold," perhaps a derangement of the entire alimentary tract.

Perhaps in the light of such facts the reason north pole explorers escape not only colds but all sorts of acute disturbances is not difficult to understand, nor why weather observers on high mountains should complain on coming down and mixing with people. That colds are contagious is a fact well recognized by my old patients.

OVERHEATED ROOMS. A young woman living in a thinly settled part of the city, one of my recent patients not fully informed regarding dust influences, was talking with one of my old patients.

"Why is it," she was asking, "that my father when he comes home wants the house overheated, while my mother and I are perfectly comfortable with a much lower temperature? And that is the way with Mr. — (a neighbor); the moment he gets home he wants the house overheated. And there is Dr. X; he is never warm at home. It seems the doctors all have their offices overheated and yet they speak of the evils of close, overheated rooms."

My old patient mentioned that her doctor (myself) does not have his office overheated. The new patient suddenly saw a light. "Oh, he does not go down town." The subsequent conversation developed that she saw that when men are constantly exposed to infection down town they want the rooms overheated while those living under good air conditions all the time are comfortable under a much lower temperature.

But this patient could not understand the case of two sisters, one of whom was at home most of the time and always wanted the house overheated, while the other sister who was down town all day, much exposed to bad air, wanted more ventilation the moment she came home; she did not complain of a low temperature. How is that to be explained? The reason is not far to seek: The one sister is a marked dust victim; the other is an immune (at least as far as known, perhaps she does react, symptoms may appear later).

Varying Manifestations of Colds. The term "cold" as used in this volume and as already mentioned is synonymous with Dust Infection. Individuals react differently and indeed an individual may be differently attacked. An attack may be so slight that there is a mere sense of discomfort, a feeling of malaise or feeling achy; there may be even a chilly sensation. With additional exposure decided evidences of a cold may appear. There may be a disturbance in the respiratory tract or in the alimentary tract or elsewhere.

"Caught more cold" commonly means more exposure to bad air. At times colds seem to be epidemic, especially in the early part of the new year. Locally the usual explanation is this: Snow and ice on streets and sidewalks hold down infection; the snow and ice may be discolored by a large amount of tobacco juice, not to mention soot that comes from burning soft coal. Street cleaning stops when there is ice and snow and then comes a thaw and the accumulated filth is liquified and tracked indoors where it becomes dry and is pulverized under foot and arises as infected dust. A few days of thaw may dry out the filth on streets and sidewalks and then it is blown about and practically everybody may complain. That is the time when the doctors are busy day and night. On the other hand if the accumulation goes out suddenly with a warm rain the "expected epidemic" fails to materialize.

To show how dust infection affects different members of the family I shall briefly mention a few family histories.

FAMILY HISTORIES.

Several years ago a high school student came to me complaining greatly of ill health, she was on the point of breaking down. I knew the air and dust conditions of that school and promptly told her what I thought was at the bottom of her difficulties. On getting her family history I found that her father was much exposed to infected dust and was constantly complaining of colds and catarrh. That meant he brought home infection; that in turn meant she was getting bad air at school and at home. Her mother was apparently an immune; she never complained. Her eldest sister was also an immune, could go everywhere and anywhere. (She recently removed to a large city and now complains of "rheumatism.") Her second sister was very susceptible; could not go anywhere without becoming ill and complained greatly during the closed door season at home on account of infection brought by her father. When she took vacations in a clean community she got along very well but suffered coming and going on account of air of railway coaches. Her susceptibility to colds reminds one of the remark of Robert Louis Stevenson. He requested people with colds to stay away from him as far as possible, because otherwise he was sure to catch a cold.

My patient apparently was not as susceptible as the last men-Had she been she would not have been in high tioned sister. school. I explained that likely she would continue to suffer more or less until she finished high school and that her future health would depend upon her environment, whether she lived under good or bad air conditions. It was interesting to follow developments. She managed to complete the high school course and then went to a college where air conditions are good and there had good health. Although she "studied harder than ever," she showed no signs of being "overworked." Then she taught in the local schools for a year and was complaining more or less constantly, her complaints being traceable to air conditions. At one time there was an acute inflammatory process. Then she obtained a position in a suburban school near a large city. Here everything is neat and clean, especial attention is paid to cleanliness and to ventilation. She now has the best of health, never complains. I may add that I now and then prescribe for every member of that family. Such a family history clearly shows the influence of environment.

People who have drifted about among physicians and are still "uncured" as a rule have a poor opinion of "medical science." When their susceptibility and the nature of their ill health is properly explained to them, and when they see explanations verified, they get a better opinion of the art or science of Medicine.

Unfortunately few physicians make any detailed inquiry into family histories. I failed to do so myself at first. I recall the case of a middle-aged woman who when asked if she had a family replied, Yes, a husband and two children. Are they strong and healthy? Yes, the boys are thoroughly healthy but my husband complains some of catarrh. I inquired no further and on my notes entered, "Family history negative," a standard phrase in medical case reports. Some time later when we were well acquainted and

when I was after details I learned that she had lost five children in infancy. In the light of such a history it is no wonder that the two remaining ones are "thoroughly healthy." The weak ones died off.

We sometimes hear the Scotch spoken of as a "hardy race." Adam Smith tells that of a large number of children born to Scotch families only one or two reach maturity. Perhaps that explains it. Those who advocate large families may or may not know about this weeding out factor. In large families children receive less attention than where there are only one or two. But there may not be the survival of the best. There is an old saying, The good die young. As matters stand now the "survival of the fittest" means the survival of those best adapted to live under unsanitary surroundings. If conditions were improved many more would survive.

Several years ago while visiting in a large and dirty city I accompanied a friend to the home of one of his friends and was asked to stay for dinner. Besides the father and mother there were a boy of about eight years and a girl who had just reached school age. All the family "looked healthy," a fact to which my friend directed my attention as an argument against my idea that a dirty city is an unsanitary city. I suspected that at the first opportunity he would bring up the subject for discussion. Now when a doctor visits people naturally there is a tendency to direct the conversation along the line of things medical. Some do it to get free medical advice, others "to make talk." We all know how readily the doctor will talk shop. He may talk entertainingly when otherwise he would be dull. There was no difficulty in getting data. A few properly directed questions led me to arrive at some conclusions regarding the remark of my friend that all the family looked healthy. Here are some data on which to base conclusions:

The father's family was country bred and healthy. He came to the city years ago and city life agreed with him. Two of his brothers also tried city life but had to return to the country. The mother was city born and so were her parents. She has "robust health." She belongs to the apoplectic type and one feels like predicting premature death from cardio-vascular disturbance. The first two children died in infancy. Then came the two living children. The boy is healthy, "only he gets very nervous at times." A little questioning led me to assume that he reacts when conditions are very bad. The girl is just reaching school age and the effects of school air are to be determined. Then came another child that also died in youth.

Here then we have a father who is adapted to city life; a mother who is adapted; two children who are the survivors out of five. Had the father been susceptible he would not have remained in the city; he would have gone back to the country with his brothers. Had the mother not been adapted she likely would have perished long ago. From such a parentage one may expect children more or less adapted to city conditions. And where three out of five fail one may look for "healthy looking children." It would be interesting to know the subsequent fate of such a family.

In this connection I recall another family history, three grown brothers and two sisters. One of the brothers came to me ten years ago, complaining of continued ill health, saying he and a sister had more than their share, that they more than made up the family average, the three others practically never complaining. Today these two sickly ones are still living. The sister who never complained died suddenly of pneumonia and one of the brothers may at any moment die of apoplexy. My patient is prudent and in spite of his more or less complaining is likely to live on to old age.

Environment and heredity are closely bound up. It may be all but impossible to determine where the one begins and the other ends. Every now and then we meet people where one or the other is very susceptible, having constant ill health, the other being immune. Of the children some are susceptible. Thus in the case of the — family, country people living in isolation, mentioned later on, the father is immune to dust influences, the mother

very susceptible. The two oldest, boys, follow their mother, likewise the youngest, a girl, two daughters being immunes.

Out of the family histories I will quote that of — family. It is an average prosperous family, dependent on daily labor.

This family was with me for a number of years. The children are given in order of their ages; there is an interval of about two years between each; the youngest has just arrived at maturity; all are unmarried.

Father: has an occupation that keeps him out of doors most of the time; is never ill and never complains of an ache nor a pain.

Mother: has been subject to colds and sore throat all her life; throat full of scar tissue; mucus forms readily on exposure to dusty air; rheumatic and neuralgic pains frequent, at times one can diagnose fibromyositis and again neuritis; had an attack of pneumonia recently, recovered promptly in good air; is a "chronic neurastheniac." Ill health is very largely dependent on air conditions. Her parents were farmers and susceptible to bad air.

Daughter: has an indoor occupation with fair air conditions; has frequent colds and an irritable throat, but looks the picture of health.

Daughter: indoor occupation with poor air conditions; belongs to the rheumatic type of dust infection and complains more or less constantly; aches severely all over after an exposure to unusually bad air.

Son: indoor occupation under bad air conditions; has always been subject to colds and coughs and had two attacks of "lung fever" as a child; has tried a number of occupations since leaving school but has not yet found the right one, the one compatible with "good health." He is the only member of the family who under-estimates dust influences—and suffers proportionately.

Daughter: exposure to bad air means dysmenorrhea, with more or less aching along the spinal column. She remains at home, goes out but little.

To make such a family history of greater value one should inquire further back regarding the grandparents and greatgrandparents, in fact back as far as possible although we should keep in mind that the further back we go the less reliable data become as well as causes from which people died. This is especially true in new countries where physicians are few and where the methods of diagnosing are of the rough and ready sort, where people die of "lung trouble" and stomach trouble," terms that may include all kinds of diseases and causes of death. The place where the ancestors lived is important. People who have always lived in the country may be healthy simply because not exposed to the causes of disease. People on the other hand may be healthy because they are the survival of the fittest. We trace our ancestry to Europe: Under what conditions did our forefathers live? To what extent was there a weeding out? The descendants of people long accustomed to city conditions are more apt to thrive under city life than those whose ancestors have always lived under rural conditions. The robust country man coming to the city may not last long, while the anemic city man lives on and on. The Jew who traces his ancestry to some European ghetto may be able to live under city conditions here where another whose ancestors have. been country people, as most of the European Jews coming to our country now, may utterly fail. In a larger sense, these remarks apply to the prevalence of diseases, as for instance to the immunity of the West Coast negro to malaria, the susceptible have been and are constantly being killed off. Our own people would become similarly immune if long enough exposed, but naturally at a great loss of life.

In discussing the influence of an unsanitary environment on offspring one should also mention the reverse. I have several histories of individuals who many years ago were brought from large eastern cities as foundlings or "refugees." Some at least were children that come under the head of "gutter-snipes," they were ill-formed, prematurely old, and showed the scars of conflicts with unsanitary city conditions. Such individuals are usually adopted by childless couples, at times by families with many children, and the contrast between "strong and healthy country children" and

the "weak and sickly city child" may be very marked. In time the child grows into a man, the man marries—and in his children Nature reasserts herself, his children as a rule are "strong and healthy."

Shall we say that man like animals and plants reverts to the aboriginal state if "left to nature," if freed from artificial conditions and restraints to which man subjects himself, his children, his animals and plants?

Shall we go a step further and say that "strong and healthy" means such only under good surroundings and that the strong and healthy fail on going into an unsanitary environment?

Civilization means cleaning up. We differ from savages in that we do not tolerate lousiness and filthiness, we bathe frequently and wear clean clothing, we have clean homes and clean cities. To understand this fully we must read about former days. Shall we say that in proportion as cities do not clean up they do not represent the civilization of today?

In whatever manner we follow up the subject the need for cleaning up crops out.

DUST INFECTION AND AGE.

When one studies many dust victims, covering a large number of years, one feels inclined to divide them into groups about as follows:

THE NEW BORN. We all know that it is impossible for every child to live; some die at once, some lead a precarious existence for days or weeks or months and then perish. Children living under sanitary conditions and having the best of care naturally stand the best chance of surviving, but we should not forget that such children may be "delicate," they readily react to unsanitary surroundings and may develop into "chronics."

The second period may be said to begin with school life, that means coming in contact with others under more or less unsanitary surroundings. The air of schools as a weeding out factor of course varies greatly. Some schools are very unsanitary, in none is the ventilation perfect. The child from a clean suburban home on attending the school half way to the heart of the city may find conditions very bad; there may be constant colds and ill health of all kinds, not to speak of contracting the specific diseases of childhood. On the other hand the child from the heart of the city, living under bad air conditions at home, may find that same school sanitary, that is comparatively speaking. We thus have a paradox: children of some parents are sent to an "unsanitary school" while children of others, those from the heart of the city, are sent to a "sanitary school." The slum child may actually have better health while going to the school half way out to the suburbs or edge of town.

Third, a period beginning with the close of the graded school period. Here we must divide individuals into two subgroups, those who continue their schooling and those who get into some gainful employment, including the girl who stays at home and does housework. The boy or girl who has been going to a comparatively sanitary graded school now goes to the unsanitary high school located in the heart of the city where air conditions are very bad. There may now be so much ill health that the student drops out. Those who pass through an unsanitary high school may be considered the survival of the fittest, meaning that they are able to thrive or at least exist under unsanitary conditions. When they go to college, especially to one where some attention is given to air conditions, they may have no difficulties at all. They may even survive the air conditions found in professional schools in the very heart of large cities.

Fourth, the period when an individual begins an independent existence by taking up some occupation. Whether an individual leads the life of a farmer or market gardener or whether he leads the life of a clerk down town or as a mechanic in some factory may make a marked difference in his future life. It is the exceptional man who becomes an employer instead of being the employed. The industrial city is constantly calling for strong men but it may be only a few years until it has "taken it out" of them

and has no further use for them. Unfortunately we have no reliable statistics regarding the longevity of men in different trades and professions in our country. People are not born to trades and professions as they are in the old world; foreign statistics can not properly be applied.

Fifth, the decline of life, when an individual begins to realize his limitations, that he can no longer do as in youthful years. Many have chronic ill health, others frequent acute attacks. When we critically study symptoms we often find that attacks are conservative processes, just as symptoms are warnings from nature. The city man who has constant ill health may have a return of good health on going to the country.

Sixth, finally we may consider people who have attained the proverbial three score and ten. It is interesting to study the lives of old people, the conditions under which they live and have lived, and whether they have or have had much or little ill health or sickness. In thinly settled communities many may reach old age, while in crowded cities it is the exceptional individual who attains it. With infection all about it is a wonder that a city man reaches old age at all. Golden weddings are rather frequent in the country. One of my friends has a belief that a fatality soon follows a celebration. Perhaps it is due to the fact that the quiet of the home is disturbed by a large crowd, some of whom bring infection.

TIME LOST ON ACCOUNT OF ILL HEALTH.

The amount of time lost on account of ill health and disease is an interesting question. Some individuals lose much time, others little. A headache may disable a brain worker, a backache a laborer. Slight pains and aches may be neglected, severe pains call for rest from work. Some persons are disabled from a slight ailment, others, especially poor people, keep on working even when seriously diseased.

Acute specific diseases may appear suddenly, but chronic diseases as a rule appear only after repeated premonitions. The abil-

ity to take a timely day or a week off may mean to escape serious ill health and disease, as well as chronic ill health. To some Sunday as a day of rest means much. The subject is especially interesting from the standpoint of dust.

I have already referred to a patient (p. 93) who soon recognized the value of a vacation, a day or a week or even several weeks off, and now avoids much ill health. Here is a patient, one of several similar ones, who was sent me by a physician as a "peculiar case" which he wanted me to "work out."

I found the man to be a dust victim "with a stomach." He promptly improved by following good air advice, plus taking a little medicine, and then was ready to go to work. I advised against this, telling him to get himself in good shape first or he would relapse. A few weeks made a wonderful difference in his appearance. Then a brother who has a poolroom1 became ill and another brother took his place; the latter however began to "give out" in the course of two or three weeks, and then my patient thought it his duty to relieve him, for an hour or two at meal times at least. I advised against this also but he thought it was his duty. He remained for less than a week when he "was all in." He was now glad enough to remain under good air conditions, chiefly by going out along the river, fishing. About two weeks later the substituting brother was again on the point of breaking down, and my patient again went to the rescue, daily remaining a short time, at meal hours. I questioned him closely. It was interesting to find how in proportion as he was exposed to bad air conditions he felt bad, while his brother, by being out under good air conditions for a few hours every day, improved. Neither of these two men is adapted to indoor-bad-air life conditions. a matter of fact, the other brother, the poolroom owner, himself is not adapted but has simply continued, not knowing what else to do. If my patient discusses these matters freely with his brothers it is likely that all may adopt the pure air advice. I am curious to see how these three cases, one of whom is my patient, will ultimately work out.

¹ On the window is painted "Shine and Cigars." That means that the room is filled both with dust and amoke.

CLIMATE.

If people can not otherwise account for their ills they will ascribe them to the climate or accuse the climate.

Man is peculiar in that his kind is found everywhere, from pole to pole. At the same time we must consider that there are different races or strains of man, some adapted to one region, some to another. If the Eskimo from the far north and the tropical South Sea Islander exchanged places both would likely promptly perish.

People of the temperate zone with half a year of summer and half of winter bear such changes quite well—they become adapted to variations. But if the change is too great they may not flourish, as our people among the Eskimos or in the hot moist tropics. The term climate of course includes many things besides changes in temperature—food, clothing, housing must be considered.

When we ordinarly speak of "change of climate" we have no radical change in mind. As a rule people move along lines of latitude rather than longitude. It is the exceptional man who goes to the tropics and returns home with some tropical disease, or returns from the far north with feet or hands or ears frozen off.

Our people, my folks and your folks, are accustomed to the alternation of a warm and cold country, half the year we have winter weather and half the year summer. We are used to this. The very young and the very old may react acutely, may even perish, but ordinarily we do not look for such effects nor do we expect ill health or disease on account of the annual changes—barring such affections as, for instance, hay-fever and sunstroke in summer, chilblains and frozen ears in winter, not to speak of freezing to death.

We constantly make efforts to counteract disagreeable effects—dress warmly in winter and live in warm houses, or keep cool and in the shade in summer. Yet many take few precautions at all and still are healthy and live on to old age.

But people in ill health or diseased may be acutely sensitive

to annual changes, they complain of the heat of summer and the cold of winter, but that these annual changes are productive of ill health and disease is another question. People who do complain of weather and seasonal changes likely have something the matter with them due to causes other than climate.

When we critically consider causes of ill health we may conclude that climate by itself has little influence in producing ill health, not to speak of disease. We must consider that man is constantly interfering with nature, that he is altering the conditions under which he lives. For one thing he creates an indoor climate for himself, just as he does for his house plants. Many ills are traceable to an "indoor climate" and that means especially to conditions found in homes, in public places of all kinds, stores, shops, factories, offices, churches, theaters, schools. Indeed the very air out of doors is modified, filled with smoke and dust, obscuring the life-giving sunlight.

Climatic influences, weather influences and dusty air influences are usually intimately bound up. The man who has ill health and "changes climate" by going say to southern California and clerking in a store in the heart of a large city, perhaps living close by, is not at all getting the "benefit of the climate." The real climate is out of doors and away from the city. The invalid who goes south on the approach of cold weather does so mainly to escape northern indoor life; in proportion as he lives in hotels or health resorts indoors he misses the climatic influence. When a physician has seen many such cases he may have some decided views which he will impart to patients who think of changing climate.

The hay-fever victim who "changes climate" in reality escapes his usual affliction by going to a place where the cause of his ill health or disease (the pollen of certain plants) is absent. It may not be a matter of climate at all. Some plants depend on climatic conditions, others on conditions made by man himself. The Ragweed does not grow in shaded forests nor in undrained, wet places. Making the soil arable usually means to make it favorable also for the growth of the Ragweed and for weeds in general. Pollen dust

as a cause of ill health should be differentiated from "climate" as a cause of ill health. Different kinds of pollen produce different kinds of "colds" or "catarrh."

Physicians are constantly sending patients "to a different climate." But they do not send healthy people, there must be "something the matter." It is the strong and healthy who go to a new country to settle; they leave the sick and diseased, the feeble and decrepit, behind—at least that was true before the days of easy travelling facilities. The new settlers are healthy; it is only gradually that the old diseases of civilization come in.

It is not likely that the home climate produces the ill health and it is not likely that a change of climate pure and simple will cure, although such a change may produce a marked effect, perhaps less due to climate itself, however, than change of life and surroundings, habits, rest, food, water, etc., all must be considered. Many, like the Knight of the Holy Grail, seek in a distant country for that which they will likely find near at home. Dust-free-air is advertised by German sanatoria. But there is no need for the dust victim to go to Germany; he can have dust-free air near at home.

Formerly on account of limited travelling facilities it was difficult for a physician to determine whether a patient, ill from any one or more of many causes, was influenced by climate or not, but today he may arrive at definite conclusions. Some physicians are constantly sending patients away. In reading English biographies one constantly finds references to London physicians sending their patients away. Some are sent south on the approach of cold weather and north on the return of warm weather. Some people try all sorts of climates, seashore, plain and mountain, not to speak of hot and cold climates.

A physician is constantly meeting patients where the matter of climate comes up, as in the following case. A young housewife who had always lived in this locality complained more or less of general ill health and every now and then of sharp pains, especially pains localized in the chest. Such pains are variously referred

to as pleurisy or a stitch in the side, intercostal neuralgia, neuralgia or rheumatism. She had tried different physicians and had been dosed with all sorts of "anti" remedies, especially with supposed anti-rheumatic drugs. She complained that she had more difficulty in the winter than in the summer and accused the climate. She came to give me a trial. When I studied her history, including her symptomatology, I came to the conclusion she was a dust victim. I found her ill health varied according to where she had lived in town; she complained greatly in the heart of the city and comparatively little in the outskirts where she now lives, here mainly after acute exposures. I tried to explain the nature and cause of her ill health, that it was not due to our climate. In the course of time the assumption was verified. She had a number of exposures, as on railway trips, shopping, etc. Her experience soon convinced her that the only thing she had to guard against was infection in the air.

One day she spoke of some friends who had removed to the northwest. One had been complaining like herself but in the new home all troubles disappeared. Naturally the change was ascribed to the "wonderful climate." My patient knew better; but when she continued to receive glowing accounts of the "wonderful climate" and how easy it was to maintain health, she concluded to go there with her family, especially as one of her children was complaining greatly, being also a dust victim.

Before my patient left I explained to her quite fully how man modifies his surroundings and indeed the very air he breathes. He entirely alters the face of the earth. He cuts down the forest, and fields of grain, or crowded cities, take its place; the bare prairie or desert is altered. In a new country potatoes or peach trees are not found growing wild, nor does one find the common household pests and parasites, nor the common diseases of civilization. People are healthy in the new home because the old diseases have not yet been brought in, they will all appear in time.

Now there are people, patients, who readily understand explanations and always remember them. They will live up to the spirit of the explanation and not merely to the letter, in other words, they reason about things. I had assumed that this patient would always remember what had been told her, but subsequent events showed that it was the old story, Out of sight, out of mind. Unless some people are constantly in the care of a physician to remind them they forget.

This patient in her new home in North Dakota had good health. Her sickly child also had good health and grew up "strong and healthy." But life in the new community was quite primitive and she soon tired of it; she wanted to live among people. She was still influenced by the idea of healthy and unhealthy climates and induced her husband to remove to arid Colorado, the land of much sunshine. Here she lived in a small and clean town and had good health, but her husband's business was not good and soon another change was made, this time to southern California, which also is said to have a "healthy climate." Unfortunately her new home was near the heart of a large city and then both she and her daughter began to complain more and more. I learned this through mutual friends who saw the explanation and marvelled that she did not see it and that others do not see it.

What does a man do in a new home? Does he take up farming and lead an outdoor life, or does he work in a store in the heart of a crowded city? Does his family live in the suburbs or in the heart of the city? To what extent are dust influences and weather and climatic influences confounded?

LOCALIZED PAIN. BACKACHE. "RHEUMATIC CASES."

My first practical experience as a physician was obtained in a large city. I treated people to the best of my ability. I now see how I wholly misunderstood many.

One of my first patients was a "backache case," a man approaching middle age. He gave a history of "specific infection" followed by "blood poisoning" and that in turn followed by "rheumatism of the back." Under the free use of iodides the "backache or rheumatism or whatever it was" quickly left. The

man was so pleased that he recommended me right and left, especially to people who were "rheumatic." Unfortunately I failed in practically every case; some had had iodides before—and if that had been the cure they would not have come to me.

Individuals who have localized pains (as a backache or lumbago, chest pains, especially in cases where such names as pleurisy, pleurodynia and intercostal neuralgia are used, or where the pain is in one of the extremities) often vainly try all sorts of remedies and means to get relief. One meets all kinds of cases, people who have tried all the doctors of the neighborhood, and perhaps large city specialists, and who in their desperation tried patent medicines in the hope of stumbling on to something that would help.¹ We all know how people are influenced when some nostrum is strongly recommended to them. Some go to sanatoria and mineral springs; some are sent by their doctor who is unable to benefit them. When otherwise sensible men and women who see the ridiculousness of faith and mind cures are willing to give these a trial in the hope of being benefited, one can see to what extent people will go to get relief.

There are of course all sorts of causes bringing on localized pains and producing ill health, but a very common one is generally overlooked. Many of these individuals are dust victims and when they properly understand what that means and live up to good air advice they are greatly benefited.

A young man, cashier in a bank, came to me complaining of rheumatism; besides severe pain in the shoulder there was more or less aching throughout the body, particularly along towards spring, more especially at times when liquified filth was tracked indoors and pulverized, when there would be a black streak from the door to the cashier's window. My explanation of dust infection was too simple; he did not believe it and moreover "no doctor ever told me of that before." He did not return. I should have made the explanation more guardedly. A year later he returned, saying he had observed himself and he believed there

¹ People afflicted in this way can perhaps profitably read Lent's "Being Done Good." It gives a more or less humorous account of a man who was sadly afflicted and was trying to find relief.

was something in the dust theory after all, and then he told of recently having been to a physician who proposed to "knock out the rheumatism" but instead "knocked out the stomach." In addition to his other complaints he was now suffering from a deranged alimentary tract.

In the course of time this man discovered that there was no cure properly speaking, that it was a matter of prevention, and then one day he packed up and went to the Pacific Coast and since then has had "the best of health."

Mr. —, a middle-aged mechanic, has been with me since early 1903. He has had all sorts of experiences. Being a man with a family and not being foot-loose like the man just mentioned, he can not make any radical change, in fact being a poor man he is compelled to work under adverse air conditions and continues to suffer. At times he has severe attacks of pain, "rheumatism or neuralgia or whatever it is," in the side and back. The man is a good citizen, in short the kind of man who is apt to get the best one has to give—but what is to be expected in the case of a poor man dependent on his daily labor who has nothing laid up for the proverbial rainy day; who can not take a needed vacation or a few days' rest when sickness impends; who can not afford a trained nurse in case of confinement to bed, and who is wholly unable to live up to good air advice?

I soon determined the man was a dust victim and attempted to explain what that meant, what he must do to be saved. One must give more or less medicine along with good advice. I tried to supervise health, to point out how he could reduce his ill health and acute attacks to a minimum, but perhaps needless to say the man who can not live up to advice will continue to suffer. He gets along fairly well during the open door season but complains greatly during the closed door season, and especially at darkest before dawn. He is able to pay only small fees, yet I was willing to carry him because I was getting data. True it is only a repetition, but this very repetition is what confirms one's belief in the correctness of a theory, the theory of dust infection.

He had consulted a number of physicians before coming to me, including men who claim to be specialists, but who were not such properly speaking. The fact that he remained with me all these years must be considered good evidence that I benefit him more than any other physician. In the course of years the reaction at darkest before dawn has been more and more severe and this last year he became desperate.

Occasionally I had an opportunity of discussing specialists with him not only regarding himself but also other members of his family. He may or may not have followed my advice.

People in ill health and disease often need the services of a specialist, of the man who has special knowledge. How do people know who is the proper man, the best man, to consult? Many are woefully ignorant, so ignorant that they believe the man who advertises himself as a specialist in the newspapers is the one to consult, when as a matter of fact he is the last man in the world to consult. The real specialist does not advertise, unless it be by presenting papers before medical societies and publishing papers regarding his work and cases and thereby acquainting fellow-physicians with his work and the kind of cases for which he is qualified and which he seeks. The general practitioners, not to speak of specialists, send him cases—and often the best service the physician can do an applicant is to refer him to the proper specialist.

But when a physician has repeatedly made all necessary arrangements and has written the specialist to be on the lookout, and when one finds that the individual, "the case," went elsewhere, one questions, "Is it worth while?"

During the unusually severe attack of last spring he became desperate. He asked me what I thought of going to a large city specialist, one recommended by fellow-workmen. What shall one say? How much time and attention does a poor man get from a busy large city specialist who counts his time by minutes and who may not give a poor man the necessary time to make a proper investigation, and failing to do so how can he benefit? My patient

thought the experience of a great specialist might enable him promptly to recommend something that would help. We discussed the pros and con.

Unfortunately I did not know the specialist who had been recommended to him. I told my patient there are sorts of specialists, some real, others pseudo. The real specialist who cultivates a small field likely knows his field well, if a man properly "belongs" to such a specialist he is apt to get the best that Medicine has to offer. On the other hand the specialist who "specializes" in everything that those who come to him complain of, and who scarcely rejects any applicant, is only too common; the patients, or "cases" (or shall one say dupes?) of such men are to be pitied. How shall one distinguish between the two?

The real specialist gets his patients through the recommendation of fellow-physicians and of people who have been benefited by him. He does not advertise in the newspapers. The pseudospecialist on the other hand gets his patients mainly through newspaper advertising.

The real specialist writes for the medical journals, as already mentioned; he tells of his experiences for the benefit of other physicians. If he finds or discovers anything new he tells it; he does not have any secret remedies or methods. The man who has such quickly finds himself repudiated by his fellow-physicians. Just to what extent a man writes for the medical journals, or indeed a book, may depend on many factors, but usually men who are specialists go on record so that other physicians know what they do. What a man publishes largely determines the kind of cases physicians send him. When a physician is asked to recommend a specialist, if he does not know the man he is likely to look up what he has written.

The pseudo-specialist or charlatan or quack, on the other hand, neither tells of his discoveries nor writes for reputable medical journals. He is very apt however to tell of "wonderful discoveries" and of great skill and "eminent success" in the newspapers. But there is nothing tangible; his "discoveries" are kept secret.

Now the specialist my patient had heard of through fellow-shopmen was a man whom I did not know; I did not even recall that I had ever heard of him. I told my patient I would look him up to see what he had written on the subject, about the particular complaints of my patient. He at once assured me that the man was "all right," and when I saw that he was determined to go to him, was it worth while to continue the discussion? Under such circumstances a physician usually washes his hands of the case, in other words he severs the relationship of physician and patient. I felt inclined to do that—but I wanted more data, and unless the man reported I would get little or nothing. I asked him to let me know what the specialist said.

He returned in a week. It was clearly to be seen that he came in the spirit of the man who obliges another, as one who has some valuable information to give. He told me of the "thorough examination" he had received; as a matter of fact it was less thorough than my own, as he soon admitted. He showed me the prescription which he was given; it was the usual "anti-rheumatic" kind.

Parenthetically it may be said that this prescription differed from one previously given him by a "specialist," of the kind who specializes in practically everything, in that it contained no "pain killer," that is, opiates were absent. An observing druggist has repeatedly told me that "the old chronics are very grateful for a little anodyne or narcotic that is slipped into the prescription; they notice it at once." This may make them feel better immediately and they may be more grateful to the symptom-prescriber who does "slip in" things than to the scientific physician whose prescription is aimed to "gradually remove the cause"—but just what some assume the cause to be is difficult to determine. In the light of cases cited in this volume it would be necessary to remove some patients from the cause, change their environment, rather than try to remove some internal cause.

I judged from my patient's remarks that the physician he consulted was really a good man who examined according to the usual methods of the thorough-going physician, but it was clearly

evident that he was looking for well-defined disease and did not suspect the man was reacting to environmental influences. Finally I asked what the city doctor charged: it was as much for the single consultation and examination as he paid me for a whole year.

It was clearly evident that the man no longer regarded himself as my patient. He was taking "the other doctor's medicine." Under such conditions one does indeed feel that the relationship of patient and physician is severed. But I had had the man under observation for so long that I knew what would likely happen: he would improve now that the open door season was at hand, but in all probability later on would relapse. What I did say was merely to express the hope that the prescription would benefit him and that I would be glad to hear from him later on.

Then one week after another passed. Finally the closed door season arrived and then one day he telephoned that the old pains had returned, and would I please send him some of the old medicine, "You know what you used to give me." The man is still my patient. One often swallows his pride in order to get continued data. He now regards that trip to the city as an "experiment."

Shall one say that the poor man who must work daily must also suffer more or less on account of bad air conditions? Shall one say that if workmen were properly organized through Unions they could make a demand for better ventilation?

These are pitiable cases. What can such a man do? What can the physician do? Is there any cure, any drug that will cure? How will it all end? Will the pain increase to such an extent that finally there must be a radical change?

Here is a brief mention of several cases that may shed some side-light on the practice of medicine in the small community.

Mr. —, a middle-aged farmer who loafed much about the store of a small village, came to me at the end of winter on account of "rheumatism." The man was so ignorant that I did not deem explanations worth while, but merely gave what he wanted, medi-

cine. He got well as soon as the open door season arrived; of course he ascribed it to the medicine.

Among the people he sent me was an intelligent farmer who had complained of rheumatism every winter for years; he was now thinking of going to California to escape our "horrible climate." I might have given him what he wanted, medicine, but I thought it best to explain, beginning with indoor climate and bad air and in time pointing out what this means. How much time shall one give in making explanations, especially if they seem not acceptable? He finally told me he would consider the matter of taking treatment from me; he failed to return.

A few weeks later I met him on a trolley car; from some remarks on the weather we soon got to discussing common ailments, rheumatism in particular. With ample time I went into details and answered his objections. A few days later he became my patient and remained for a long time. All some people need is a proper explanation.

The first mentioned farmer relapsed next winter, as I thought he would, and then I attempted to explain to him also—but he wanted medicine, he did not want any "ridiculous explanations." He sent me no more "new patients;" far from it, he heralded me as a crank.

To what extent shall one head off getting such a reputation? To what extent shall one strive to acquire the reputation of being a "good doctor, so kind to the poor?" It requires only a few minutes to hand out the desired medicine.

One of my old patients who has "sciatic rheumatism" but whe in reality is a dust victim and has learned to live within his limitations and thereby reduce attacks to a minimum, recently sent me a new patient whom he suspected was also a dust victim but who resented the idea of dust being injurious. My old patient did not enter into discussion with the man; he thought I could explain better.

I gave the man two hours in examining and ruling out affections and diseases and in advising him and of course telling him about dust influences. He offered some objections which I answered briefly. I referred him back to my old patient who could make explanations perhaps as well as I could, he could speak from personal experience. I gave him a prescription, for salicylates, to be used only when pains were very marked. I charged him a dollar, telling him in case he returned the fee would be doubled.

A week or so later I saw my old patient. He had a poor opinion of the man, pronounced him "no good," that he would not listen to explanations and that he expressed himself emphatically on the most doubtful points. A short time after the man came back to me. Often the printed page influences people when words of mouth will not, and so I gave him several of my reprints, some of them rare, asking him to read and return them. That was the last I saw of the man and my reprints.

Mr. —, another "rheumatic," came to me recommended by an old patient, because I "study my cases." Now I was willing enough to study the case but I was unwilling to make continued a-b-c explanations and so I referred the man to a young physician who himself is influenced by dusty air and who had a lot of time to make explanations and likely would give as good service as I could. Instead of following this well meant advice, the man "talked," said I wanted only rich patients, that I did not want anything to do with poor people, etc.

Mr. —, a middle-aged man, working in a grain elevator with much time spent in a filthy office where men who chew and spit loaf, came to me from an adjoining town, "crippled by rheumatism." The pain extended from the back down the left leg. The man seemed greatly discouraged and I gave him nearly two hours in examining and explaining and advising, in the end telling him I was working on a manuscript for a book which when it appeared would tell him of dust infection in some detail. He expressed himself so enthusiastically about the idea that I gave him two of my very rare reprints to read and to be carefully returned. Then one week after another passed and I heard nothing further. Several months later an old patient from that neighborhood said the

man had promptly packed up and gone to the southwest where he could lead an open air life.

Cases like the above could be cited in number and variety. A physician has all sorts of experiences. Were these men really dust victims? I do not know but I do know that poor people who must work and ignorant people who will not learn must continue to suffer. Like all other physicians I would rather speak of successful cases than of failures. Many failures are due to the fact that the patients did not live up to advice. I am telling about these things in order that others may profit.

At times individuals who have localized pains and aches recover suddenly. When this occurs under certain conditions people are apt to marvel. I might mention a case.

One of my patients, a middle-aged housewife, had a localized ehest pain, a "stitch in the side," due to an adhesion of the lung to the chest wall, which was due to an old inflammation. She was a dust victim and whenever there was an acute exposure the pain was severe. Moreover she had lost a sister through tuberculosis and was constantly worrying that she herself had it or would get it. She was greatly benefited by good air advice, but since it is practically impossible wholly to avoid exposure every now and then she had an acute attack. One day she was standing on a chair picking cherries when she felt herself slipping, and suddenly threw out her hands to grasp a branch. Immediately there was a sharp pain in the side or chest. Soon she began to spit a little blood. She sent for me in great alarm. I inquired whether she had recently been exposed to bad air; she had not. I offered her this explanation; in reaching out suddenly and violently the adhesion to the chest wall was torn loose and there was some bleeding, but since she had not been exposed to infection recently I thought there would be no inflammatory process. My fear that there might be internal hemorrhage I kept to myself. I would keep her under observation and if that did occur speak of it at the proper time. I expressed my belief that now that the adhesion was torn loose there would be no more stitches in the side. My explanation was a good one. In a day or two she was all right and since then there has been no localized pain, although she still complains, after the fashion of simple dust victims, on exposures to bad air. Such an explanation may be regarded as a rational one, at least she regarded it so.

We sometimes hear of people who are suddenly cured of some affliction that confined them to bed, as the woman who was bed-fast on account of a stiff or "rheumatic" knee, who suddenly jumped out of bed when her house was on fire and "was cured." Often the adhesion is such that there is a very limited motion. When a certain tension is reached there is pain and the individual stops further movement, but if a sudden violent motion is made the adhesion may be torn and a "cure result." Unfortunately the physician never knows how far to go in making violent exertions for fear of doing more harm than good. On the other hand there are men who do not hesitate; indeed, there is one "school of practitioners" who use violent methods and who in this way cure some, but on the other hand there may be irreparable damage.

An old patient with internal adhesion asked about consulting such a practitioner, or shall one say manipulator? I advised against it. Some time later she told me she had gone and "the treatment nearly killed me." People often speak about doctors "either curing or killing." That is no joke with some modes of practice. Veterinarians largely practice on that plan. The very fact that such simple modes of treatment are not in general use, are often wholly neglected by regular physicians, means there is too much danger connected with them compared to the small amount of good results.

That violent exertion may be the cause of acute pain is shown in the following:

Mr. — had "rheumatism of the shoulder." He lived on the edge of town and was little exposed to bad air. I hesitated to

speak of dusty air but thought it my duty to do so. He listened closely and agreed to observe himself. Incidentally he spoke of gardening and how his neighbor's chickens annoyed him, how the other day when he found them scratching a newly made bed he threw a heavy chunk of wood determined to kill some. I recalled that under such conditions one's arm may ache and the pain be misinterpreted as rheumatism. When I mentioned this he exclaimed, "By George, I guess that is the cause of my rheumatism." There are all sorts of explanations for "rheumatism."

HEALTH IN THE COUNTRY AND IN THE CITY.

From all the preceding one may get an idea that the city (or urban as opposed to rural life) is the home of ill health and disease, but when we examine into the matter we find exceptions. The term city includes all sorts of communities; it is as broad as the term civilization, which primarily goes back to "city," meaning that cities are an index of a country's civilization. While some cities are in the advance, many are in the rear; we speak of "backward cities."

The modern well-managed city is very different from that of a hundred years ago, a fact one fully realizes on visiting European cities where the heart is closely built up, quite different from the suburbs. Cities in olden days were fortified and there were good reasons for having crooked streets, namely to get out of range of the invading enemy. Naturally in fortified cities in times of war the weeding out was terrific. The death rate of every large European city even a hundred years ago was enormous. It was a long time before cities began to supply themselves with pure water and good food, and only today are they making an effort to get good air. Unless one visits a city like Berlin one has no proper conception of what a clean and well managed city means and how ill health and disease can be reduced to a minimum, that is ill health from preventable causes. In all countries where the soil has become exhausted the food problem is of course an important cne.

Some cities are making commendable efforts to get rid of narrow and crooked streets and to keep streets clean and to get good water, as well as to inspect food supplies. The well-managed large city has all sorts of inspectors. There are hundreds of men who look after sanitary matters; it will pay anyone to look up the health report of such a city. At the other extreme is the "city" (really an overgrown village) where everybody does about as he pleases. If there are laws and ordinances at all they are not obeyed. Unsanitary conditions of all kinds abound and there is much preventable ill health and disease.

The experience of physicians in treating people in ill health, not to speak of actual disease, varies greatly. The country doctor, living among people leading a simple life and seldom coming under city influences, may be able to trace causes, he may be able to trace ill health to its source, just as he may be able to trace smallpox and scarlet fever. The physician practicing in a cleanly suburb may also be able to trace causes of ill health. On the other hand the physician in the slums may meet so much common ill health that he may not make any attempt to treat cases other than by giving a little medicine, and that is all many poor people expect; the same is true of physicians in backward towns and neglected county-seats where no attention is paid to sanitation. they attempt to trace the causes of ill health at all they may be baffled on account of many factors that enter into the matter, including bad water and bad food. The term baffled is the proper one to use; newspapers are constantly telling about how the doctors are baffled.

At this place it is proper to say that my own studies of Dust Influences have been pursued during the last eleven years in a small spitter's town of about 20,000, where little attention is given to sanitation and where the bad air factor is especially noticeable. Besides townspeople one of course meets any number of country people, some from remote and isolated portions of the county or adjoining counties, like the farmer boy already mentioned. But one also meets people from large cities, as for instance people

visiting relatives. They may have had much ill health in large cities and may be induced to consult the small town doctor, for we all know how people will recommend "my doctor." And then there are people from the large city who come to the small one to make a home. People coming from the densely settled heart of a large city to a small town may find conditions far healthier than in the old home; for one thing rent is cheaper and there is less crowding. Then again, the man who had an office in a tall clean office building down town may find his new office on a spit street in a small city quite different. He may have had good health in the large city but suffers in the small one. I might briefly mention an illustrative case report, a young man who came here from a clean Eastern city.

A RHEUMATIC CASE. One of my old patients, a down town business man, several years ago brought in a clean, fine looking young man of about 25 years, who had recently come here, on the close of winter. After a few preliminary remarks he said: Now Doctor, in the very beginning I want to tell you that until I came here I never had any illness since I had the common affections of childhood. I have always had the best of health. I take care of myself and have no bad habits. I am a moderate eater and recently have been undereating thinking that would help. I do not drink and use very little tobacco. Now I can not understand what is the matter. Soon after I came here I began to feel sore in the chest; my family never had any lung trouble. Then the pains became more severe and travelled into the shoulder and down the arm: I thought it must be rheumatism, but when I began to ache all over the body I thought it must be something else. I wanted to go to a doctor but did not know to whom, and so I asked my friend here and he said you would quickly tell me what my trouble is. (I looked at my old patient; he winked but did not say anything.)

Well, did Mr. X (my old patient) tell you what he thought your trouble is? "No."

Mr. X spoke up. "If I had tried to tell him he would not have believed me and so I brought him up for you to tell him."

Now here was a young man in a small town, with an office on one of our worst spit streets and with clouds of infected dust blowing about. He reacted almost at once. I explained his difficulties as being a reaction to an unsanitary environment. He listened closely, asking a question now and then, and finally said, "Well, if that is the cause of my ill health I know what to do"—he left town shortly after. In his old home in the East he had good air.

This patient of course was under observation too short a time to enable one to speak definitely. Instead of speaking of patient I should have said "case," for nothing further was done; I did not prescribe any medicine. Perhaps the diagnosis made by my old patient who brought the man to me is as good as any, "Spit Dust Rheumatism," not on elegant name but certainly expressive.

The term Rheumatism is an old one, like many another; it is vague, all sorts of cases, of pains and aches, are grouped under it. Acute articular rheumatism (a supposed definite disease) is rare in this community, "rheumatism" itself is excessively common. There are of course all sorts of causes for "rheumatism," but a very common one, the inhalation of infected dust, is generally overlooked. The connection of "rheumatism" with tonsillitis or sore throat has long been recognized and some throat troubles are called "Rheumatic Sore Throat," but that air conditions are at the bottom is seldom mentioned.

Often "rheumatism" or "rheumatic pain" is localized perhaps at the site of an old injury. Since my personal experience with backaches (p. S1) I have realized the importance of making inquiries into past histories, and one of my earliest "dust papers" was on just such cases. I have seen a large number of cases and the advice to avoid bad air has helped many a patient to reduce his pains and aches to a minimum, after trying all sorts of remedies, cures and treatments.

Perhaps it should be added that a large percent of such cases have the pain localized in the back, and if the pain is "over the

kidneys" many have a belief that there may be "kidney disease." This idea is fostered by some patent medicine men who say backache means Bright's disease. As a matter of fact there may be no pain at all in the back in cases called Bright's disease.

THE AIR OF PLACES.

The idea that the air of a place has an influence on health and ill health and disease is a very old one. Hippocrates twenty-five hundred years ago wrote a treatise on The Air of Places; it is still interesting reading. As a rule medical writers have specific diseases in mind; malaria is perhaps more frequently considered than any other disease. The subject is a large one; here I desire to make a few remarks. It should constantly be kept in mind that in this volume I am concerned with ill health; remarks on diseases are to be considered incidental.

Men explain things in the light of existing knowledge. The explanations of Hippocrates seem very crude to us; they are quite different from those of the chemist of say fifty years ago, just as those of the latter are different from those of the bacteriologist of today. The books of different generations explain things differently. Explanations of the causes of ill health are now mostly in terms of bacteriology. The chemist explained bad air mainly by the amount of carbonic acid gas, the bacteriologist by the kind and number of microbes. Naturally one questions, Is bacteriology able to explain all? Medicine like everything else is an evolution.

We sometimes see the statement in print that "Germs are everywhere," meaning of course disease germs. The statement however is not true, not even when applied to harmless bacteria, and harmless bacteria immensely outnumber injurious ones. The air on high mountains is free from germ life, likewise the air on midocean. They can not and do not flourish under such surroundings.

It has been observed that some small islands in the ocean have insects that are wingless. This at first sight is mystifying but the explanation is not far to seek. Insects that fly are swept out into the ocean by strong winds, only those that are wingless and live near the ground survive. Just as insects that rise up into the air are blown out into the ocean so disease germs are blown away and the small island is "healthy."

In reading about the buffalo on the dry arid plains of the southwest, we learn that the Indians and early white hunters hung up pieces of meat to dry in the air, making jerked beef. The air of that thinly settled country was so pure that there were not even the common germs of putrifaction. Things dried without undergoing decomposition. Today we can dry meat only in a hot oven that sterilizes everything. The air of cities is so full of bacteria and fungoid forms of life that produce decomposition that a few hours exposure to the air in warm weather is sufficient to spoil food.

Again, we are constantly reading about milk full of bacteria, but we should keep in mind that that means milk sold in the city. Milk in isolation, in the country, is as pure as ever; when it leaves the farm it tends to become contaminated, especially when handled by careless and dirty people.

We also hear it said that the Bacillus tuberculosis, the germ of consumption, is found everywhere. In reality the statement applies only to communities where people are massed together. It is absent on mountain and sea, in forest and field, but is plentiful in cities, and especially in places occupied by the sick who are careless about their expectorations. It is under such conditions that the Bacillus tuberculosis and other germs are common. For the same reason morbidity and mortality rates of some communities are high. Old time prisons were very unsanitary. Air conditions were often terrible and few of the prisoners escaped falling victims to consumption. Since giving attention to sanitation the death rate on this account has been reduced to a remarkable extent. (It is rather anamolous that today people of this kind often get more attention, are better housed and fed, than poor and honest people.)

The Air of Places under which people live and work is an interesting subject.1 We need only consider what occurs in the life of any of us on getting up in the morning. We get up with a bitter taste in the mouth, perhaps indicative of having slept in an ill ventilated bedroom, or having visited a poorly ventilated theater last night, or having been to a poorly ventilated church. We take the street car down town. It may be crowded and poorly ventilated and we get our first whiff of bad air. People who live in the heart of the city get bad air all night, perhaps the entire twenty-four hours. Some individuals go down town to stay all day, to work, others go for only a short time. Under what sort of air conditions do they work? The air conditions of an office in a tall building where attention is given to the matter of ventilation may be comparatively good, while the air of a store with much sidewalk filth tracked in may be very bad. But we should not forget that although a woman who goes down town to shop for an hour or two may come home feeling bad, yet the clerk who waits on her and others all day long may scarcely complain at all. Is it necessary to add that the clerk who can not "stand the racket" is not apt to occupy such a position? Out of the many who try, only a few succeed.

If we go by rail we may feel the closeness of the air in the coach and yet the conductor may not complain. He too is the survival of the fittest. The conductor subject to colds and catarrh and weeping eyes and nose and frequently disabled on account of sickness is not apt to occupy such a position. Hence in considering the air of places we must also consider the people and their adaptation to it. Some are better adapted than others to live under unsanitary surroundings. When we read of crowded Chinese cities we may not be surprised that the Chinese can live in our large cities under surroundings that are fatal to the white man.

In small communities, especially county-seats, certain street corners are favorite loafing places and in the absence of "moving on" and "anti-spitting" ordnances, or if there are such, their non-enforcement, the sidewalks may present sights almost unbelievable. The need for cleaning up and flushing streets and sidewalks frequently must be apparent—and the need for repressing the spitter more so.

We all know that some trades and professions are regarded as healthy, others unhealthy. Open air people are apt to live long, those living under confined air conditions, perhaps much in contact with people in ill health or disease or the causes thereof, may be short lived. The preacher who is exposed to bad air once or twice a week may yet have a better expectancy for long life than the physician who is constantly visiting poor sick people in neglected homes.¹

The physician who goes to a distant country to study yellow fever or plague victims may be virtually committing suicide. The same may be said of the missionary who goes to a country where diseases prevail to which his ancestors had not been exposed.

As already mentioned, the Father of Medicine twenty-five hundred years ago wrote about the Air of Places. Benjamin Franklin had some good ideas regarding the importance of proper ventilation. Physicians today are fully alive to the importance of good air in the prevention and treatment of tuberculosis; they are just beginning to realize the value of good air in the prevention and treatment of ill health. We are only beginning to realize the significance of air and dust influences. A short time ago I received a circular from a German sanatorium which laid special emphasis on "Staub—freie Luft." Moreover there is developing a tendency for hospitals to leave the heart of the city and go to the suburbs. We of course must make distinctions between surgical cases and cases of well-defined disease and of mere ill health. Some hospitals of necessity must be in the heart of the city. Sanatoria should be in the suburbs or country.

Men in writing about phenomena, about facts, are inclined to add their explanations. When we read old time accounts we may be willing to accept statements of facts but we may wholly reject the explanation; we say we know better.

¹ And what shall be said of air conditions under which doctors meet? Are doctors so accustomed to bad air that they pay no attention to the air of their meeting places? I have frequently attended meetings in tightly closed rooms with the air densely filled with tobacco smoke. One almost feels like saying that the doctors of least importance in a community and of least importance to medical societies are the inveterate smokers, with few exceptions. Chewers with decorated shirt fronts are now seldom seen at medical society meetings.

In going over my case reports the reader should keep in mind what are statements of facts and what are conclusions or explanations. Explanations given in this volume may appeal to the reader who is a dust victim and who has been observant; others may be strongly inclined to reject them. Some of my best patients were at first strongly opposed to the idea that dust affected them, that they were dust victims. The willingness, not to speak of the ability, to observe and keep a record is an important factor in deciding who are "best patients" and who remain from one year to another. It is from such patients that physicians may learn much in the course of years.

When patients object to the explanation offered, the question arises, Do you know a better one for the facts? How do you explain the presence of so much ill health in some communities, the sallow complexions of people, with newspapers full of patent medicine advertisements?

Needless to say all case reports are partial; they dwell on certain facts and neglect others. To arrive at valid conclusions the reader should study nature at first hand; he should not form his opinions altogether from books. The reader who has ill health that has not been satisfactorily explained may learn much by studying The Air of Places, the air which he breathes.

DYSPEPSIA.

Everybody has an idea of the significance of this term. It is an old word, going back to the ancient Greeks, literally meaning difficult or poor digestion. The Century Dictionary says:

"Impaired power of digestion. The term is applied with a certain freedom to all forms of gastric derangement, whether involving impaired power of digestion or not. But it is usually discarded when some more definite diagnosis can be made, as gastric cancer, gastric ulcer, gastritis, gastrectasia, or when it depends on poisonous ingesta or appears as a feature of some other disease, especially if that is acute. Functional dyspepsia, also called atonic and nervous dyspepsia, is gastric derangement, not exclusively neuralgic, which may involve a diminished or excessive secretion of the gastric juice, or diminished or excessive acidity in that secretion, or an irritability of the stomach walls or an impairment of their motor functions, and which appears to depend on some defect in the innervation of the stomach, and not on some grosser lesion."

The term is one of convenience used by people in discussing their ills; it is also used by the doctor in giving superficial explanations to his patients.

There are all sorts of causes that produce derangement of the digestive functions, some readily ascertainable, others only after much investigation, if at all.

Many of my early patients complained of dyspepsia, of a disturbance of the digestive tract, but unfortunately I did not understand them. Because they did not complain of colds and catarrh as I then understood the effects of dust inhalation, I was misled and did not even suspect that they were dust victims. But I soon found that some who were subject to "stomach troubles" in addition to colds and catarrh were benefited by good air advice, that is they complained less of dyspepsia, and that opened my eyes. It gradually dawned on me that some dyspeptics were in reality dust victims, dust influences manifesting themselves differently from what I had heretofore observed, in fact so differently that one can speak of a dyspeptic or a stomach type of dust infection.

Many of my early patients were misunderstood. This of course is a confession of ignorance. I no more understood them than my predecessors and when patients find out that a doctor does not understand them and is not benefiting them they naturally go elsewhere.

Out of a large number of cases I shall make a more or less brief reference to several that have been written up in a volume for physicians, who want more details. In a volume like this one can not go into, for instance, the matter of laboratory findings or details of chemical or microscopical analysis.

Among my first patients on coming here in the summer of 1900 was a young carpenter. He complained of dyspepsia. He had consulted a number of physicians; I was the "new doctor in town" and he came to "give you a trial." I investigated, examined, advised and prescribed but since I was not benefiting him he soon left. I kept full notes on the case. I begin a new set of notes each year and file away the old ones. From time to time I go over them for ideas or conclusions. Then it dawned on me that while temporarily out of the city doing country work he felt all right. While he was my patient I had not noticed the effects of exchanging city air for country air, neither did I reason about a carpenter's occupation: that besides doing new work he also does much repair work on old houses, especially ripping up dusty floors.

Among early cases I might mention Mr. —. He had for years been with one of the old practitioners who was about to retire and was now in search of a new physician. The man asked many questions. I was at first surprised but when I considered that his family physician discussed things freely with his patients I knew that was no more than one would expect. He asked me regarding

¹ It was thought best to abstract cases from that volume as a rule rather than to make mention of other cases. The reader who wants more details can likely borrow that volume from some physician.

It should be said however that that volume was written from a very practical standpoint, its aim being to show that many misunderstood and neglected cases are dust victims that can be greatly benefited by pure air advice.

Although Medicine is commonly regarded as a science or at least as an art, in reality it is a business, just as any other business, and some doctors find it very hard to make a decent living. To interest the general practitioner of medicine one must write from a very practical standpoint. The very scientific physician may not be at all interested in the common ills of the people.

the causes of dyspepsia. I told him there were all sorts of causes, some readily discoverable, others with difficulty, some not at all. He approved of my explanations, adding that old Dr. X all these years had never been able to find out the cause of his recurrent attacks, occasionally lasting for weeks. He knew I had been to Germany and asked regarding stomach examinations. I explained briefly. The fact that I was willing to answer questions and that I could make laboratory examinations induced him to give me a trial. He gave me all the opportunities possible to investigate and to advise and prescribe, but alas I benefited him so little that in time he tried another doctor. I may add that when I know I am not benefiting a patient and see no prospect for doing so, I do not try to hold him. I no more understood the cause of this man's attacks than his old family physician had understood them.

Looking over my notes now the case is perfectly clear to me: the man was reacting to the air of an unsanitary, unventilated crowded store. If he came back to me now I likely could give him advice that would benefit him. But after all would he follow advice? In small communities where everybody knows everybody else, the people are apt to talk about the physicians and their views and modes of treatment. He likely knows that I would advise "change of air," if not "change of climate," and he may be wholly unwilling to do this. At any rate he has not come back to me; he still hopes to be cured by taking drugs.

Since then I have seen a number of similar cases and was able to give advice that was followed by good results. If I were to write a chronological account of my experiences, I would have to mention a number of cases that I misunderstood before coming to those I partly understood, finally coming to those I understood at once. Here I shall skip and take up cases where I at once suspected air conditions. I have already cited two case reports from my paper on Dust, A Neglected Factor in Ill Health (see pp. 84 and 90). I shall briefly refer to a third case. This case will be cited in detail in a volume for physicians.

A young country woman, farmer's maid, had severe recurrent

attacks of "stomach trouble" or acute gastritis, with severe vomiting followed by great prostration. Her mother, a country woman, had been similarly afflicted and indeed on removing to the city quickly perished. I discovered that the young woman's attacks followed trips to town. Like most country people, she came in only on fine days. Now it happened that the day she came for an examination of the stomach contents was a rainy one. I asked her to return the next day and I would explain and discuss the laboratory findings. She said she would be unable to come because she was sure to be sick, that she got sick every time she came to town! I expressed my belief that she would be able to come, without giving any reason.

The next morning she promptly expressed her surprise that she was able to come, for she certainly expected to get sick. I explained that she was a dust victim and that she did not get sick because the day had been rainy and she was in town only a few minutes, that she did not do any shopping and did not inhale a lot of dust.

Dust influences in this case manifested themselves at once by an irritation of the respiratory membranes, quickly spreading to the esophagus and stomach. The treatment she had been getting (hypodermics to allay the excessive irritability of the stomach) only aggravated her condition. I myself gave no hypodermics.

That was eight years ago, the patient has been with me ever since. At first she required much attention and reported at short intervals. It was difficult for her to learn the lesson of pure air, or of avoiding bad air, but she finally did learn. She reduced her attacks to a minimum by avoiding exposure.

But at times there were attacks when I could get no history of an exposure, when she had been living quietly in the country for weeks at a time. Occasionally I was in doubt whether she was really a dust victim or whether after all there might not be present some disease or some organic alteration of the stomach. But suddenly some of these mysterious unaccountable attacks would clear up. One day, for instance, I saw the farmer's wife, her employer,

walking along with her dress trailing over the filthy sidewalks. Then I thought I saw a solution. The next time the girl came in I asked whether it was her work to clean soiled dresses; it was, and that is where she got the infected dust.

There were occasional house parties, people would come out from town. During the open door season these had no influence on her, but she would react during the closed door season. People from a dirty city naturally carry a lot of infection to an otherwise clean country home.

There were a number of incidental exposures, as taking a short trip by rail or going to Sunday School or to church. She could take a short ride or go to Sunday School or attend a short church service during the open door season but suffered during the closed door season. One time she attended an entertainment at the opera house for the benefit of her church. She thought it her duty to attend. The reaction that followed was so severe that she nearly perished.

In the course of several years her health improved to such an extent that symptoms and attacks were reduced to a minimum and then she decided to marry, moving to the edge of a county-seat and living under good air conditions. From now on health supervision was merely nominal. She still has an occasional attack due to unwitting exposure or an error of judgment. The unpaved streets in the resident portion, for instance, may be quite muddy shortly after a shower and she assumes that air conditions down town are good, when as a matter of fact dust is flying on the few paved streets in the heart of the city. Or, again, during the winter time the ground is covered with snow. Under such conditions one naturally assumes that there is no dust down town. But in the heart of the city the snow with its accumulated filth is more or less melted and is tracked in, filth is pulverized and suspended in the air as dust.

When a physician has kept such a patient under observation for years, and has even obtained an autobiography, enough data accumulate to enable one to write a book. In cases of this kind one almost feels inclined to speak dogmatically, something one must guard against when dealing with chronics, because people want to know the why and wherefore. But such is the constitution of the human mind that when people get critically ill they want a physician who talks and acts dogmatically about remedies that are supposed to cure—one must even do that to the sick physician or he will not take his medicine.

I may add that the above patient had had all sorts of diagnoses, none fitted. She was a dust victim. There was no disease, only a reaction to abnormal air.

In the above case the relationship of attacks to visits to town was fully recognized by the patient.

In the case of Mrs. —, an elderly farmer's wife, the relationship was not so clear, in fact the patient for a long time denied that visits to the city had any influence at all. But when she kept a daily record we found that attacks marked by severe vomiting came on two or even three days after the exposure—a time sufficiently long to mislead. A case of this kind shows the value of keeping a daily record. Such a delayed action is unusual.

At this place I may say that patients who remain with a physician from year to year and enable him to get continued data are comparatively rare. People in ill health, at least in the beginning before they learn through bitter experience, are always ready to change physicians or medicines, they look for "cures." The patent medicine men, in their advertisements, keep up the old time belief that diseases are readily curable—and to the simple all things are simple. A disease is something to be "killed" or "knocked out." A disease name is something definite to most people and is linked with "cure." The terms sickness and ill health are indefinite; they are to be resolved into some common term, into one of the "disease names" that we see in the advertisements of patent medicine.

Unless the physician takes unusual pains he rarely gets continued data.

As already mentioned, it may be comparatively easy to trace the causes of ill health, not to speak of disease, among country people living under simple life conditions and only occasionally going into town, into crowds. But it may be almost impossible to trace ill health in those living under a complex environment, city people generally. I have repeatedly met farmers whose attacks of dyspepsia, as well as other forms of dust infection, found their explanation in visits to town. It is rather strange that a man should not himself trace the relationship of cause and effect. reason is perhaps due to the fact that the farmer is constantly seeing clouds of dust from roads and from his fields and he makes no distinction between such and clouds blowing about on city streets and dust found in stores, churches and theaters. farmer got sick every time he came to town he might at least trace a town relationship. When he comes to town on a rainy day he may escape, then the next time he comes on a dusty day and gets an attack he fails to trace the relationship because he escaped the last time. That some farmers have traced their sore throats to visits to the city has already been mentioned. Dust of course irritates the respiratory membranes but that the alimentary tract should react is less obvious, as a matter of fact ordinarily physicians fail to consider dust in their obscure stomach cases. When country people are taught and understand these things, how they suffer on visits to the city and how doctors fail to recognize the nature of their ill health, they are apt to wonder in regard to the doctor's medical education, whether something has not been neglected. More than one of my patients has expressed the view that before a doctor begins to practice he should have country experience. He should go, or be placed, under simple country conditions to study the common ills and their causes, perhaps at some country crossroads, and then go to the small town and study people. Next he should go to the small city and finally to the metropolis where there are all sorts of sick people and where the environment is so complex that it is difficult to trace what is readily traceable in the country. As matters stand at present, physicians are educated

regarding well-defined diseases. They get little instruction regarding common ill health and if they get any practical experience at all it is in city hospitals with patients drawn mainly from city slums, people who live under radically different surroundings from country people, in fact entirely different from those of the average intelligent citizen. Perhaps it is no wonder that many physicians fail in treating common ill health. Of the many applicants coming to the physician only a few are really diseased, the great mass have ill health to which no definite name can be applied. If the physician does give a name the next physician may give an entirely different one. Thus old chronics have all sorts of diagnoses—and come to believe in none.

The old chronic who has had much experience with physicians knows that they differ greatly. On the one hand he meets the symptom-prescriber who hands out a bottle of medicine or a box of pills on the merest statement of symptoms without giving any advice except how to take the medicine. At the other extreme is the scientific physician who is inclined to take nothing for granted; he wants to investigate and make his own diagnosis. He will likely have considerable general advice to give and he will certainly advise regarding food.

Food, or improper eating, is most commonly accused of being the cause of dyspepsia, not to speak of all sorts of ills. On the other hand we have the faddist who claims to cure all ills by dieting. People often diet themselves or they are advised to do so by physicians. Often the advice is most arbitrary, as to avoid fresh bread or gravy, or fried meat or raw vegetables or this or that. One often meets patients who have been living on weak tea and toast or crackers for months at a time. What many need is a varied diet.

But the place where a man eats is often of more importance than what he eats. A city man, for instance, may constantly complain of dyspepsia; he goes to the country on a vacation, perhaps on a hunting or fishing expedition, for a few weeks; soon he is able to eat anything and everything. When he returns to the city

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his old troubles come back. I have had patients who took their food supplies along, all except fish and game and water, and who took no more exercise than at home. They had no difficulty while away but complained soon after getting back into the old environment.

Several years ago I had a young farmer as a patient who repeatedly expressed his belief that "It's what I eat." He was thin and anemic and could scarcely drag himself around. He had been dieting himself. He found so many things disagreed that he was almost starved. He turned out to be a dust victim. Now we know how a man who is too ill to work will make frequent trips to the city or to the heart of the city and stand around on street corners or spend much time back of the stove of the village store. Under such circumstances the dust victim only aggravates his ills. When I pointed out why he probably had a disturbed stomach, he avoided infected dust and in a short time was able to eat anything and everything. Then one day he went to a political rally at his countyseat. He was careful to avoid indoor crowds but he mingled freely with the crowd on the street, assuming that the air would be all right outside. The next day he came in complaining greatly, saying he had eaten a little candy and that upset his stomach. He was not going to eat any more candy. He knew, "It's what I eat." The attack passed off promptly and he attended another rally. Again he came in complaining, saying he had eaten a little popcorn and that was the cause; he was not going to eat any more popcorn. I referred to his previous remark, and since the silly season of politics had now closed, I predicted that he would eat pie before long, for Thanksgiving. He sadly shook his head, "Pie! I don't dare to eat pie." I did not see him again until early in the new year when he came in. He had gained greatly in weight. in fact he looked like a different man. I quickly discovered that his complaints now were really due to overeating. A short time before he had had the annual pig-killing and with a lot of fresh meat in the house he used it too freely. I merely advised him to cut down his rations. That was all that was necessary.

The three cases mentioned above were country people, it was easy to trace the relationship of cause and effect: I will now make a brief reference to some city people.

One of my early patients was a down town business man who had had ill health for years, the most common diagnoses being such simple ones as "It's the stomach," "It's the liver." He had not only tried a number of local physicians but had even been to Germany. Many regard the German specialist as a sort of supreme court: if he can not help, nobody can. The German specialist sent him to one of the mineral springs. He returned home cured, as he thought, and was full of praises for German doctors and their methods. He told me how fully they examined his stomach.

Having recently visited Germany myself, I determined to examine his stomach according to the German books I brought with me. I investigated, examined, advised and prescribed—but, unfortunately, the man did not get better. After a time he left me. That he was a dust victim did not even dawn on me. It is only exceptionally that such a disappointed patient comes back and gives one a second trial, and then, after having studied and benefited apparently similar cases, one may be able to give relief.

Another early case was that of an elderly lawyer with chronic dyspepsia, attended with formation of much mucus in the stomach, with more or less also in the respiratory passages. Good air advice not only helped his respiratory catarrh but also his stomach catarrh and then I began to suspect he was a dust victim. I began to study his ill health in the light of air conditions. My suspicions were verified in the course of time and then I began to insist that he live up to good air requirements. After several years I was beginning to lose patience and spoke rather positively and then he did make a change—he went to a city specialist who examined and gave him active treatment for several weeks. He had to pay him more for this short course than he had been willing to pay me for all those years he was with me. I saw him some time later. He told me the "stomach specialist was no good." Just then he was taking treatment of a country doctor who had advised him to

try a new kind of mineral water; he was feeling better under its use. Some people prefer to take nasty tasting medicines and mineral waters rather than live under good air conditions. One wonders how long they will hold out.

A middle-aged woman living in the heart of the city on a very spit dusty street, in fact over a saloon, came to me, accompanied by her husband, for a preliminary consultation. At the time I had more cases than I wanted and to accept a new case was a serious matter. Rather than give superficial attention I would rather not have her as a patient. To get at the bottom of her ill health and its causes would probably require considerable time. But one question led to another and I learned much regarding her illness, her ancestry and the surroundings under which she lived. I came to the conclusion she was a dust victim and I decided to accept her, merely to see whether the supposition would be verified. I investigated as fully as I thought necessary and then explained what I thought was the cause of her attacks and continued ill health. Her case came under the head of chronic dyspepsia or chronic catarrhal gastritis, an affection that has a large and varied number of symptoms.

The patient entered into the spirit of the investigation and watched herself and the conditions under which she lived. In a short time she was satisfied that her ill health and recurrent attacks were dependent on dust influences and largely preventable, but not wholly so. She now spent most of her time in the kitchen, this being in the rear of a very long building, opening on to the yards of others, with plants and trees, and, with the wind coming from the west, making air conditions quite favorable. It was the front of the house and hallway with air coming up the hallway that was to be avoided.

To show how matters work out at times and how patients differ I might refer to a little incident which occurred at a Fourth of July celebration, held in a little park at the edge of town. The day was a fine one but in the afternoon a thunderstorm came up

suddenly and everybody rushed into the large barn-like pavilion. My patient saw the storm coming and was in a quandary. She looked into the pavilion. The air was very dusty, said she could smell and taste the dust, it was so thick. She knew what would happen if she went into it. She went around to the east side of the building and noticed that the roof was overhanging. She reasoned that if she stood on the east side she would escape getting wet and by keeping out of the dust avoid getting one of her disturbed stomach attacks with severe headaches and prostration. Her reasoning was good; she did escape.

Another patient, the one referred to on p. 153, was also present at this celebration; she was undecided what to do when the storm came up. She knew if she went into the pavilion she would get sick, while if she stayed out her new summer dress and hat would be ruined. She went in with the crowd, and as a consequence had a severe attack.

During the same week another one of my patients came in to report. She had also been at the park and went indoors, she had a severe attack (in this case of membranous catarrh of the intestines).

The next time the patient here under discussion came in, I told her about these two and how they suffered. She said, "Now wasn't I smart that I thought of staying out of the rain and staying out of the dusty air too?" When I told one of the other two patients, the farmer's maid, about this incident, she remarked, "Now why didn't I think of that?" Perhaps needless to say on subsequent occasions she did think of it.

At times one meets retired farmers who have always led a laborious life and who think to end their days quietly and peacefully by removing to town, perhaps to live with a son or daughter. But they quickly complain of ill health, perhaps die in a short time. They spend too much time in the heart of the city and get more infection than the body can get rid of. A physician can greatly benefit some of these individuals if they apply in time.

An industrious farmer with one grown daughter lost his wife and then suddenly tired of country life and decided to move to town. He had saved enough to pass his days comfortably but like most men he was open to any little job or "chores" that would bring in something. He helped his neighbors in their garden work, repaired fences and barns, did little odd jobs about the house, cleaned carpets and assisted at moving. Naturally with more or less idle time he spent considerable time down town on street corners. He got along fairly well during the open door season but the moment cold weather arrived, when dust was no longer sterilized by the bright rays of the sun, he began to complain.

Often a physician is compelled to spend a lot of time in investigating and ruling out the presence of possible diseases, and especially in cases of the kind here under discussion, cancer of the stomach. This patient wondered whether he did not have something of the kind. But in the light of his history I did not deem it necessary to make any stomach examination. I explained what I thought was at the bottom of his ill health and that with care it would disappear, but if not there would be time to investigate more fully. All he needed was good advice.

Another widowed farmer came to town to live with a married daughter after renting out his farm. He was not accustomed to city life, reacted constantly, had dyspepsia and constipation. Said he had "tried everything," tried doctors and patent medicine and of course dieting in his attempt to get back the health he had had on the farm.

He was ready to have his stomach examined but I deemed this unnecessary in the light of his history—but I did propose "health supervision," to have him report once a week. He soon saw that he "would have to make it a business to keep well in the city," while it "was no trouble at all to keep well in the country" and then he decided to go back to the country.

Perhaps the most pathetic cases the practicing physician meets are fellow-physicians in ill health who have had all sorts of diagnoses and finally come to believe in none, and yet are all the time expecting the worst. I recall a physician in middle life, really in his best years, who had retired to the country after years of ill health in a small city. He regarded his "case" as peculiar, as obscure and atypical. The fear of cancer of the stomach was constantly present, with every recurrent attack of deranged stomach. On getting his history and making a brief examination, I gave him my opinion—in the light of cases here cited. The explanation appealed to him and he soon verified the idea of dust infection. He again took up practice. He now knows how to guard himself and he keeps out of the dust, including dust in neglected doctors' offices where he used to loaf. I have no doubt he is the "best stomach specialist" in his city—if the people only knew it.

Now I do not want to be understood as minimizing the importance of food, of diet. It is an important matter; large books have been written regarding the subject. And yet there is a diversity of opinion on the relative importance of a high or low protein diet, on the value of a vegetable dietary, and even to what extent vegetable food should be used in a raw state or cooked. Opinions differ regarding the best drink-water, milk, coffee, tea, wine, beer, all have their advocates. Water drinkers dispute about the use of water at meals and they are often divided regarding the proper temperature of drinking water. When doctors disagree, who is to decide? There are many things that we have to find out for ourselves, what foods or drinks agree or disagree and under what conditions. Similar remarks apply to all other essentials of life, clothing, housing, eccupation. What agrees with one may disagree with another and yet there are certain underlying principles which no one can ignore. We all have some general idea what foods are good and what are bad, as we have some ideas regarding proper and improper housing. All I am trying to do in this volume is to call attention to a neglected factor, dust in the air.

The world advances; there are higher standards everywhere. We are no longer satisfied with early primitive conditions, but as yet we are not particular about the air we breathe. Cities have provided themselves with good water, with good street lighting, sewers, houses, etc., all beyond the dreams of people of a hundred years ago. This of course is as it should be. When Agassiz was professor at Harvard he made great efforts to build up the Natural History department, and he succeeded so well that other professors complained of the backwardness of their own departments; some even tried to pull his down. He pointed out that that was not the proper method; instead of pulling his department down they should try to raise their own. When cities supply the people with good air as they now supply good water we may look for a radical improvement in general health.

Under Kinds of Dust there was a mention of glass dust. One can readily understand how powdered glass may be injurious to the respiratory tract. We need only consider to what extent glass is used in daily life and how a little chip of glass in the food may injure and allow infection to occur or it may even perforate the stomach or intestines. Bits of bone are often swallowed and produce fear, but bone readily goes into solution in the acids of the stomach; glass on the other hand is entirely insoluble. Then too one might consider the sharp pointed silicious diatoms occurring in some drinking water; they may be a factor in scarring the stomach and especially the pylorus.

Bits of glass may often be traced to unusual sources. The suburban resident who has a little garden and raises chickens on filled-in soil with more or less glass must be careful how he handles the soil with his hands so he will not cut himself. His chickens may swallow glass and his teeth may find it later when eating the chicken. Root plants like sweet potatoes in pressing the soil apart may become penetrated by bits of glass and here again the teeth will find it most unexpectedly. Properly considered broken glass is a serious menace.

CONSTIPATION.

Connected with dyspepsia is constipation. This is a very common—what shall one say, disease, minor malady, affection or symptom? Or is it, at least at times, a reaction to an abnormal environment?

According to the patent medicine men, constipation is a disease, curable by their particular nostrums. Physicians generally regard it as a symptom; it is only exceptionally that it can be regarded as a disease and can be cured by proper treatment, perhaps by surgical interference. Commonly it is a symptom that attends all sorts of bodily disturbances, especially of the alimentary tract. Constipation is so common that the general practitioner rarely studies his cases sufficiently to discover causes.

That constipation may be due to dust influences did not dawn upon me for a long time. I had noticed that many of the patent medicine advertisements seemed dependent on air conditions, that they were most common during the closed door season. I noticed that this was also true of anti-constipation remedies. This led me to study cases in the light of air conditions, and I soon found that in many constipation is largely seasonal. During the open door season there is little complaint, but there may be much during the closed door season.

Cases of course differ greatly. Some individuals must make a radical change in their mode of life in order to get relief. Others may find a mild laxative taken regularly, say at night, sufficient to tide them over, a fact recognized by the patent medicine men who advise the taking of a dose of their nostrum at night. "It works while you sleep."

It is interesting to study individuals subject to constipation and get their observations, after their attention has been called to the missing factor, in the light of what is written in this volume. This is a subject that I must dismiss with this bare mention.

There is another group of cases that must be dismissed with a brief mention, that is individuals who most commonly get a diag-

nosis of "It's the liver," who are told there is something wrong with the liver or that they are bilious.

At times a patient is told he has or had gall-stones, which may or may not be true. Under certain conditions false or pseudogall-stones are passed, indeed some patent medicines will produce such, leading the patient to believe he is being cured, although he will continue to complain as usual, or on the return of the closed door season.

Other patients are told they have appendicitis or are threatened with appendicitis. The surgeon most likely gets the real cases, but some are not cured by an operation. When one critically studies such cases, and keeps them under observation for some time one may learn that they are dust victims.

Old chronics who have made the rounds in time come to attach very little importance to the diagnoses of physicians; they think it is all guess work. In order to benefit such individuals, assuming they are dust victims, one must explain fully and get them to co-operate and observe, and then certain factors may stand out very plainly. The number of nostrums advertised in the newspapers for curing what no physician can cure but which the individual can prevent is remarkable. Our Triad of National Diseases and their varied manifestations furnish a ready field for the patent medicine man, likewise for the superficial symptom-prescriber whose medicines may not be on a higher plane.

Many physicians when they get hold of a new case promptly clean him out. We all know what that means, indeed there is a slogan, Clean Out, Clean Up, and Keep Clean. Perhaps if we do the second thoroughly there will be little need for the first.

Under constipation a number of "little practical things" could be mentioned, beginning with the importance of having a regular hour for bowel movements, just as one has regular hours for meals, and the importance of giving the bowels time, and that means to have a decent closet where one does not desire to get out as quickly as possible. No prudent man will rely on laxatives and cathartics.

Curiously enough some people resent questioning about the

bowel movements and object to inspecting the feces and learning whether they are normal or abnormal. I have had patients who I suspected were passing intestinal mucus in considerable quantity, and perhaps for months and years, but who had never examined; some had had physicians who prescribed but never inquired about passing mucus. People without modern closets are of course at a great disadvantage.

AUTO-INTOXICATION. Within the last few years people have heard more or less about auto-intoxication. This is or has been a popular explanation among doctors. The term refers more particularly to symptoms or conditions produced by the decomposition of food in the intestinal tract. The term autotoxemia is also used, which might be translated as poisoning one's own blood on account of a deranged intestinal tract. The young doctor fresh from medical school is apt to use these terms instead of the older term biliousness.

During my second year here an old farmer from an adjoining county came to me complaining of stomach trouble and constipation. He had had various diagnoses, among them the common ones of "biliousness," "It's the liver," "a touch of malaria," malaria, dyspepsia, indigestion, and similar common explanations. As he did not complain of colds I did not regard him as a dust victim and advised and prescribed as a physician usually does in such cases, in the light of what I had been taught and what is given in the books. I tried my best to help him but after coming in a few times he failed to report.

Five years later he came back and I now learned that he had been living in another State but now returned to his old home. He now knew what ailed him, "It's auto-intoxication." How do you know? "That is what my son told me; he is a doctor practicing out West."

Now when this farmer was with me before I had the impression that he was a very ignorant man, that he farmed as his ancestors had and likely planted his potatoes "when the moon was right." I now questioned and found this was actually the case. Then

I wondered to what extent the son had imbibed, had retained or outgrown such ideas, in other words my interest was transferred from the father to the son. The son attended the common country schools (and we all know what they teach), and then he went to a nearby small county-seat high school where more or less elementary science is taught, and then to medical college—where they teach regarding definite diseases rather than common ill health. I could not resist wondering to what extent knowledge imbibed in the family circle still influenced him, and on the other hand to what extent his medical training inclined him to consider every patient afflicted with some definite disease.

The man's ill health I soon found was due to loafing in town and at the village store. The data I got from him did not amount to anything, but I continued him in the hope that I would get some definite details regarding his physician son.

A short time ago in discussing one of my former patients with a physician who had also had the man under his care, he mentioned having heard that his present physician had advised some outlandish mode of treatment. When I expressed my surprise, he said, "I'll bet he never learned that in medical college." He expressed his belief that that was something he had learned before becoming a medical student. More recently while visiting a dentist he made some remark, some recommendation, when I said, I am sure you never learned that in your dental college. "Oh, no, that is some of the knowledge current among the people," adding, "We doctors like all the rest are drawn from the common lot." This is a profound truth that we often forget. It is difficult to outgrow some things, and where there is no definite knowledge to the contrary a physician may resort to methods, to modes of treatment, current among the people.

BILIOUSNESS is an old term current among the people. Some old physicians still use it and even young men may use it in making explanations to their patients. To say "You are bilious" usually stops further inquiry. People think they know what is the matter.

Biliousness of course refers to bile and that in turn to the liver. The old time doctor gave mercury to stimulate the liver, he spoke of getting rid of bile and of stimulating the liver; he noticed that under catharsis his patients felt better. When I was a medical student we were told that the terms biliousness and bilious are unscientific and should not be used. As a matter of fact one rarely sees them in scientific literature.

But one may question what were the facts underlying such a term, such an explanation. What kind of cases were they to which the term biliousness applies? Similarly we may question what sort of cases are included under the term auto-intoxication? The old time doctor purged his patients with mercury; the doctor today uses a variety of cathartics and laxatives to clean out the intestinal tract and to keep the bowels open. Is the following from a patent medicine advertisement true?

"BILIOUSNESS, AUTO-INTOXICATION. Dr. —'s Laxative Tablets will almost always relieve these ailments and any of these symptoms should always indicate their use.

"Biliousness: An irritable word for an irritable condition. The old idea of biliousness is the modern auto-intoxication one hears about so much nowadays; that is, there is an absorption of toxins (poisons) from the clogged and sluggish bowels. Everyone seems irritable to you and you probably are to everyone else. You just feel all out of sorts. Probably don't eat well, sleep well or feel well. You are being poisoned by absorbing the waste from your body that should be evacuated.

"When in this condition take Dr. —'s Laxative Tablets—the quicker the better. Better still, take them in time and avoid this condition."

Such an advertisement at least shows that the patent medicine men are constantly adopting the newer ideas in medicine and attempting to show that in spite of the "advance in medicine" their old remedies are still applicable.

How can we explain the rise and decline of just such advertisements, advertisements relating to laxatives and cathartics that are so common during the closed door season and practically disappear during the open door season? I am giving my explanation. I wonder if others have a better one?

DIFFERENTIAL DIAGNOSIS. RULING OUT.

One of the most important duties of the physician is to make a differential diagnosis, to rule out diseases and narrow the inquiry down to some one disease, if possible. Failure to do so may result in serious harm, not alone to the individual but to the community. We need only think of the danger to a whole school in the failure of a physician to properly diagnose diphtheria, scarlet fever and other acute diseases of childhood, of the danger to a community from the first case of Asiatic cholera or bubonic plague.

Although good air can do no harm to any one yet in some cases that may be the least that the physician may be able to advise. The man who exhibits symptoms of ill health may be found to have a serious disease requiring active treatment, perhaps a surgical operation, as in cases where there is suppuration and nature seems helpless; pus in the chest cavity or in the abdominal cavity or in the appendix vermiformis may require prompt surgical treatment. Some one must be able to make the proper diagnosis and some one must know just what to do, or the individual will perish.

One of the commonest diseases that must be ruled out in throat and chest diseases is tuberculosis, consumption. In advanced cases this is easy, in early cases it may be very difficult, the individual may have to be kept under observation for some time. In diseases of the alimentary tract cancer must constantly be ruled out, and here again it may be difficult to recognize early stages. Men who specialize are naturally supposed to do more thorough work than the general practitioner. In the beginning stages of a disease a timely operation may save or at least prolong life; to wait until almost any one can make a diagnosis means an early fatality.

The timely use of the proper remedy, as antitoxin in diphtheria or quinine in malaria, may prevent death or at least much suffering and sickness. In speaking of suffering we should not forget that the anguish of the parents may be much greater than the suffering of the child; and on the other hand children may suffer on account of the illness of the parent. One need not be sick to suffer.

Is it necessary to say that the best general advice that can be given the people in case of ill health or sickness or disease is to consult a good physician, still better have a consultation of several? A physician constantly dealing with sick people may be considered an expert in such matters, he knows more than those who make no study of diseases. Is it necessary to add that an old experienced chronic may have a fund of knowledge learned through bitter experience that makes him a rival of the physician in that particular kind of ill health? He is the man vitally interested. He may know much more than the young doctor who tries to make light of his complaints.

The number of symptoms that attend a disease is variable, some are essential symptoms and others secondary, they may be present or absent. Much depends on environment. The "disease pictures" given in the textbooks are mainly based on city cases, only too often on city hospital cases, in other words on poor people who are sent to city hospitals. The country doctor practicing among a different set of patients may find few "typical cases" but any number of "atypical" ones; some of the common symptoms in city patients may be absent. Consumptives may exhibit few symptoms in good air, likewise the man with typhoid fever and the child with scarlet fever.

CANCER OF THE STOMACH.

Although the active cause of cancer is still unknown its course is so definite that it is regarded as a specific disease. There are different kinds of cancer. Any part of the body may be attacked, from the skin to the internal organs.

Cancer of the stomach is rather common. Nausea and retching and vomiting may at times be seemingly uncontrollable and yet under good air conditions these may be almost wholly absent. Several years ago I had under observation four cases of cancer of the stomach at about the same time, living under different surroundings, which markedly showed the influence of air conditions. I shall make a brief mention of the cases from memory, without going into details.

- Mas. —. Middle-aged housewife living on the edge of the business district, where great clouds of dust blow about. Evidences of cancer of the stomach were well marked when I first saw her. There was constant retching and almost uncontrollable vomiting. She did not last long.
- Mrs. —. Had always lived on a farm until her present illness when she removed to town to live with a married son, just beyond the business district where she got the dust from the heart of the city. Almost immediately there were severe attacks of retching and vomiting. I soon diagnosed cancer of the stomach, the diagnosis being verified by the course of the disease and death. On windy days with clouds of dust on the street, there was much nausea, retching and vomiting.
- Mr. -. A well-to-do farmer with a good home heated by hot air. Hot air means a constant current of outdoor air coming into the house. He gave a history of obscure stomach disturbance that at first was puzzling. He would get along for a week or two with scarcely any symptoms and then there would be attacks of nausea and vomiting. I soon discovered that as long as he remained on the farm he had practically no difficulty but that after a visit to town the stomach would be disturbed. When he came to me the stomach disturbances were so marked that I at once suspected cancer. He did not take kindly to the idea of remaining away from town, which I hoped would reduce retching and vomiting to a minimum. Finally I had to tell him that I could do very little for him and then he drifted into the hands of a physician who without knowing what the difficulty was promised to cure, or at least benefit him greatly, and had him come in town frequently, only to aggravate the difficulty, and he soon became bedfast. In a short time he died. On account of the discrepancy of opinion among physicians the family had a post mortem and cancer was found.
- Mr. —. Farmer who lived in town from where he supervised his farms. He was a dust victim with occasional disturbances of the stomach. Finally the disturbance became so marked that the presence of cancer was suspected, and when one day "coffee ground vomit" appeared a definite diagnosis was made. In the course of time the stomach no longer retained food and feeding by enemas was resorted to. The man lived on a hill overlooking town, under almost ideal air conditions, and to see him lying on a couch before the open window one would scarcely suspect that he had a life-destroying disease, there were no evident symptoms. Then toward fall dry weather set in and the town in the valley was overhung by a smog cloud. The height varied, at times being low and then again rising so that only the highest church steeple would be visible. Looking out over the valley one would not suspect the presence of a city at all.

Such conditions appear almost unbelievable. Just how much infection was present in the air is of course difficult to determine. But the dust and smoke cloud was irritating to mucous membranes. It was quickly

noticed that whenever it reached his open window and came into the house there was not only bronchial irritation with cough but also marked nausea and retching and vomiting of mucus. A rainstorm brought relief. The patient gradually failed. Here too a post mortem verified the diagnosis of cancer of the pylorus, but so small in size that it could not be diagnosed through the abdominal walls.¹

MEMBRANOUS CATARRH OF THE INTESTINES.

One type of dust infection, or Coniosis, rather frequent when looked for among chronics, is characterized by the passing of more or less intestinal mucus, often in the form of strings or ribbons, and with a long list of symptoms. There may or may not be a mucus formation in the respiratory tract. Because some dust victims do not have colds and catarrh one may be misled regarding dust influences. Some of my own early cases I wholly misunderstood. This of course is again an admission of ignorance, but I was no more ignorant than those about me, who like myself had not been taught about dust influences.

One of my earliest patients undoubtedly comes under this type of dust victims. She complained of a large number of symptoms, such as one finds among women who are commonly called "hysterical." I myself was inclined to label her as hysterical, that her complaints were largely "imaginary." That she had intestinal mucus and that she was a dust victim I did not at all suspect. I found this out later. Unfortunately she was so disgusted because I did not benefit her that she never returned. Even in some of my early cases that had mucus formation in nose and throat, in other words catarrh, I did not suspect dust influences. But when I began to notice that good air benefits catarrh victims I suspected that it might be good for others who have mucus formation elsewhere.

In the previous chapter I spoke of Kinds of Colds. A similar

¹ In such cases the value of surgery must be considered. Just how much benefit is to be obtained through a timely operation is of course a problem.

Since the advent of "surgical cleanliness" surgery has made wonderful progress. Often "exploratory operations" are indicated; the internal condition may or may not warrent operations on the cancer. Naturally the man who constantly operates has a greater degree of skill than the occasional operator. Unfortunately the big city surgeon often demands an enorbitant fee—but perhaps not excessive after all when we consider the time he spends away from home, hours in which he might have performed several operations in his own city.

explanation could be made regarding attacks of membranous catarrh of the intestines, likewise of dyspepsia, particularly acute attacks of indigestion accompanied by much mucus.

Although membranous catarrh of the intestines is rather frequent among old chronics, yet the books have very little to say and as a rule they are pessimistic regarding treatment.

CASE REPORT. Among my early patients was a middle-aged Irishman who came to this country while still a boy. He promptly got "American Catarrh." He looked upon it as a disagreeable and necessary evil, rather than as a disease. In the course of a few years the mucus formation travelled down into the stomach and then he had "American Dyspepsia." This soon annoyed him to such an extent that he began to consult the doctors; he had too much sense to try patent medicines. He came to me at a time when the mucus formation apparently was travelling into the istestinal tract but it took me some time to understand the case and its relationship to air conditions. He had an occupation that exposed him to much infected dust. In the course of a few years this intestinal mucus formation became very marked and then he had all sorts of symptoms. At first when working for others he had no business worries but these appeared when he went into business for himself. At one time when his business was seriously threatened he became sleepless and lost his appetite and almost any physician would regard him as a case of "nervous prostration." Then the crisis passed and the nervous symptoms diminished and again he was an "'old chronic" with mucous membranes that gave off a lot of mucus, very freely during the closed door season, less so during the open door season and still less on leading an outdoor life for a while.

One day he spoke about the healthy color he had when he first came here, and how Irish girls have a healthy color and how soon they lose it and become sallow. He noticed the same thing among Germans. After he became convinced that air conditions played a very important role in his own ill health, he saw why there is loss of color on coming to this country.

CASE REPORT. Here is a brief case report taken from a paper previously mentioned, Dust, a Neglected Factor in Ill Health. At that time I did not realize that there was a type of dust victims in which the intestinal mucus is the chief characteristic. At that time I did not even inquire about the passage of bowel mucus; indeed many patients are not aware of it on account of closet arrangements.

CASE III .- Mrs. H., a housewife of about 26, lives in the eastern residence portion of the city; she has the appearance of being "run down." She came to me early in March with a history of various disturbances; pain in the back, wandering pains in the body, headache, deranged stomach and bowels with a discharge of much mucus at times. Has a sickly yellow color. Says she has had all sorts of experiences with physicians and was now almost discouraged. I suggested a systematic examination, to which she agreed, with the following results: Bodily development good; excepting tenderness in the chest and abdomen and along the spine, the physical examination was practically negative. Red blood cells reduced to 3,800,-000; hemoglobin to 60%. Gastric fluid, after a test-meal, contained much mucus; small amount of HCl present, also lactic acid, yeast, and some Sputum mainly mucus with some purulent matter full of bacterial life, but no tubercle bacilli. Urine very concentrated; acidity and phosphates high. Pulse tracing normal, but nervous and influenced by the respiration. I should have stated before that this patient wore a long trailing dress and came down town frequently.

After further questioning the patient, and after a study of the results of the examinations, she was advised: 1. To shorten her dresses—to keep them off the ground. 2. To stay at home; if compelled to go down town, to go only on wet days. 3. To use water more freely and to reduce the amount of animal food. 4. For the excessive amount of mucus in the throat and stomach, she was advised to gargle with a very dilute salt and baking soda solution, and to drink half a glass full, hot, half an hour before meals. 5. She was placed on a laxative organic iron preparation, to be used after meals, and in sufficient amount to keep the bowels open.

This patient began to improve at once, the bodily functions became normal, color came to the cheeks, and the former disagreeable symptoms disappeared. The only time she complains is during the prevalence of dusty, windy weather, and then only of the wandering pains. The excessive secretion of mucus from the respiratory and alimentary tracts has almost ceased.

Recently it was explained to her more fully how the dust had and still does affect her, and this has made her more cautious; she is now firmly convinced of the influence of infected dust.

It will be noticed that this statement occurs: Claims she has had all sorts of experiences with physicians; is now almost discouraged. Such or similar remarks apply to many of these cases. This is a rather painful subject; when one goes into details phy sicians regard it as a reflection on the profession. Much can of course be said but after all the one great reason people get routine attention and no special investigation is that they are unwilling to pay the physician for the time it takes to make the investigations and advise fully. Good advice implies investigation and time must be paid for. That many physicians are not students must of course be self-evident. One may ask, How are people to know who are conscientious and studious physicians? Perhaps if people received more instruction in the common schools, had a better knowledge of their own body and of their surroundings, they could judge. People ought to have sufficient education to enable them to select a family physician properly. Perhaps if the people demanded a higher standard there would be fewer incompetents. On the other hand we must not forget that the standards may be so high that poor people can not afford a well-trained physician and that perforce they are compelled to resort to the uneducated and unlegalized practitioners. The practice of medicine is after all a business and the legalized practitioners have all sorts of competitors.

The number of symptoms accompanying cases of membranous catarrh of the intestines is large. I shall shortly refer to them. They vary with the season of the year, with surroundings and prudence. People in the heart of the city may have a large number, while others in the suburbs may have comparatively few. Often one meets people, patients, who complain that in spite of "being careful," of being very careful, or being "exceedingly careful," they still suffer. They do not know how to guard themselves. As a rule such patients have had all sorts of advice regarding the influence of diet. At the same time most of these patients have been overdrugged. Treatment often is heroic, es-

pecially by injecting large amounts of fluid into the lower bowel. What most of these people need is good air advice, with all that that implies.

CASE REPORT. A middle-aged woman, while greatly depressed on account of a great sorrow, lost her immunity to bad air and became quite susceptible, acute attacks manifesting themselves by the passage of large quantities of intestinal mucus. During the closed door season mucus was present more or less constantly. Her family physician was one who believed in giving lots of medicine but as she was getting no better she finally rebelled. I promptly explained that her affection properly considered was not a disease at all, only a reaction to an unsanitary environment. After getting the facts in the case, I fully advised her regarding the sources of infection and how to avoid them. The simple advice to remain in good air aided by a little medication reduced the disturbance to a minimum. There were several acute attacks following exposure, emphasizing the fact that she was a dust victim. For a year there was practically no difficulty. Then she was persuaded by a neighbor to attend a good opera, the plea being made that "this is a fine opera, attended by the best people of the town only." She went, forgetting that the night before the "worst people" in town attended the vaudeville, leaving the floor sadly soiled with all sorts of infection. She had difficulty in staying out the performance and then had such a severe attack that she almost perished. Perhaps needless to say after such an occurrence people are ex-"Exceedingly careful" means living within ceedingly careful. one's limitations. This is something that must be learned. Often it is a dear lesson. When a physician has such a patient under observation for a number of years and notices how certain causes produce an effect, he is apt to have some decided views and to speak rather dogmatically to patients who react similarly.

It has already been mentioned that many consider climate as the cause of colds and catarrh, while others consider food as the cause of dyspepsia and constipation As a matter of fact all sorts of causes are assigned in cases of ill health—often all but the right one. Bad air of the kind indicated in this volume is very common in our country and it should be one of the first causes to be ruled out. And yet on inquiry among patients it is remarkable to find how little attention is given to this cause.

One of my elderly patients (a dust victim who improved under good air advice) had had all sorts of advice and was given all sorts of reasons for her ill health. Every physician, and she consulted only good ones, thought it was necessary to advise her regarding diet. She seemed to think physicians believed her complaints were due mainly to what she eats. She herself thought they were principally due to clothing, to underwear, being too thinly or too heavily dressed. When to put on or when to take off underwear was one of the great problems of her life. Then she had an idea that the matter of baths was an important one, when and how often and at what temperature to take them. Old people are often set in their ideas and it is hard to teach them; they will revert to their old beliefs over and over. It was difficult to teach her that the thing she had to guard against was what she inhaled, that all other factors were of minor importance.

We still find physicians who have all sorts of ideas regarding the importance of material out of which underwear should be made, wool, silk, linen, cotton, open or close weave, and even its color. After one has studied a large number of cases, one is apt to come to the conclusion to give the simple advice, Live simply, breath good air and dress for comfort.

It always takes a new doctor in town some time to become established. But in time he may find more applicants than he can serve and he is apt to raise his requirements. He will no longer accept every Tom, Dick and Harry who applies. Rather than give superficial service he prefers not to give any.

As a student of ill health, my own practice and methods of course differed from the ordinary. As soon as I had more applicants than I desired I raised the requirements. I accepted applicants on the promise that they would keep a daily record of how

they felt and what they did and to report now and then, the frequency depending on the urgency of the case. A little later I expected a brief autobiographical account, including family history. Such a requirement naturally excluded those who ordinarily come for "a little medicine." On the other hand it brought those who were determined to make the matter of getting well a business. Now men must work as a rule, they can not make any decided change in their daily life. They may prefer a physician who merely gives a lot of medicine and does not demand any change in his occupation, in home environment, or mode of life. On the other hand women, especially those who have more or less leisure, can usually live up to advice and for this reason they may be more desirable as patients, and, one may add, as fellow-students.

How are we to learn about chronic ill health and its fluctuations? Why do we feel better one day, one week, and worse the next? What is the cause of ups and downs? Similarly we may ask about the wind and weather changes. We commonly hear it said that there is no accounting for wind and weather and yet the weather service is able to predict many things. The reason is that men have kept daily records for years and years and from these records certain deductions can be made. If more people kept a record of their ill health and an account of their daily life perhaps the student of ill health could likewise arrive at some definite conclusions and make predictions, not only for the life of a particular individual but also regarding the lives of all.

At first sight it would seem inadvisable to ask an old chronic who has been complaining for years to keep a daily record. What can be more dismal than to enumerate symptoms, perhaps a large number of disagreeable symptoms! And yet how is he, or how is the physician, to learn unless an account is kept? One should of course distinguish between ill health and disease. It would not be advisable to ask any one with an acute disease to keep a record, nor if there is some fatal disease that is likely to kill in a short time. If any record is to be made in such cases it should be done by relatives, just as is done by hospitals for the information of

the physician; records of the case can be studied by others and conclusions drawn.

At times one may meet a patient who objects to keeping a record, saying he, or more commonly she, has so many symptoms that they can not be kept account of. But after all the number of symptoms is limited. It is commonly said that the stars of the heavens are uncountable and yet there are people who keep track of them and if a new one appears they duly record it. In every department of human knowledge there are people who keep track of things; if anything new appears they report it. (I myself have been keeping track of new weeds and new diseases that appear in the community.) When these matters are properly explained to patients they are usually willing to keep a record—if not one may consider them "not worth while" and have nothing further to do with them.

CASE REPORT. The following is abstracted from a lengthy report written for physicians. Perhaps needless to say in a volume of this kind one can not enter into technical details.

A middle-aged woman who said she had had ill health about all her life and who had made the rounds of the doctors, and naturally was discouraged, finally came to me. She agreed to keep a record and that was the chief reason I accepted her as a patient. Some time later after we were well acquainted she wrote me her autobiography. My own notes of observations and discussions with her in connection with her own furnish enough data for a good sized volume. The woman was a good listener and a good questioner, the kind of people with whom one is apt to discuss all sorts of topics relating to chronic ill health.

When I asked her to give me a list of her symptoms, she said, "You better ask me what symptoms I do not have because I have so many. I have every symptom I ever heard of." People who have had lifelong ill health are apt to acquire a lot of information regarding symptoms. She said she had so many she could not keep count of them. I got out a list of symptoms and told her that symptoms like everything else can be checked off or cata-

logued, and then without asking leading questions I had her enumerate, in the end asking about the presence or absence of some she did not mention. Her list was a typical one; I shall refer to it presently.

She was being treated for malaria. She complained that her head buzzed almost to bursting on account of the quinine she had been compelled to take and yet she was getting worse all the time. She had tried various methods of getting relief, but she had too much sense to try patent medicines, Christian Science, or suicide, the latter on account of her religion. Although at times she was passing large quantities of intestinal mucus, no one had questioned her about it. She herself had said nothing to physicians because she assumed that it was mucus from the stomach and that it was better to pass it from the bowels than to vomit it.

She complained of the superficial attention she got from physicians and on the other hand of the large amount of medicines she received, saying she had taken a "barrel of medicine and a peck of pills and tablets." She gave a long list of purgative medicines. She had dieted severely, at times for weeks living on crackers or toast and weak tea. One summer she went to the Rocky Mountains and while there felt well, did not even require laxatives. Her ancestry goes back to rural Ireland, and that means there had not been an active weeding out.

After getting her history there was, the next day, a systematic examination concerning the secretions and excretions by laboratory methods, especially to determine the presence or absence of well-defined lesions or disease. A day or two later I explained that I found no evidence of well-defined disease, but that she was a dust victim, explaining what that meant. Of course I advised her fully what to do and what not to do. As a rule people who have been using much medicine expect at least a little from a regular physician; if they did not expect any they would go to a man who claims to cure without the use of medicine. Now drugs or medicines may be wholly unable to cure but they may help. In this case there were indications for some slight medication and

she was accordingly supplied with one or two simple remedies and a prescription. I may here add that in a short time she was able to discontinue all medication except an occasional laxative.

Now a physician may spend a good deal of time in working out a case and more time in making explanations, going into details and using illustrations, so that the patient will understand that health and ill health are largely in his own hands. They can also be told that if they will report faithfully it really makes no difference to the physician how they act, whether they fully follow his advice or not, for he will get notes, good ones if advice is followed, notes of the opposite kind if advice is not followed, but in any event there will be notes. One must explain that ill health can be worked out like almost any other problem in biology and that if the physician and patient fully co-operate in the business of regaining health much may be accomplished.

So far I have said little about the symptoms that accompany dust infection for the reason that I assumed that the reader knows more or less about symptoms of ill health. I have also assumed that practically the only people who will be interested in this volume are those who have ill health and that those who have robust health will scarcely be interested at all.

A book in a foreign language appeals only to those who know the language. Many books appeal to a limited class of readers or students, books on science generally. A book like Lent's "Being Done Good" can only be fully understood or appreciated by a "rheumatic" who has made the rounds of doctors, of schools of medicine and modes of treatment; there are allusions that even a physician may fail to understand.

But although a man in robust health may not fully understand a book on ill health, he can learn many things about those in ill health and he may learn that the complaints of a friend or relative may not be at all imaginary.

I shall now briefly take up some of the commoner symptoms of which dust victims complain. Later on I shall consider symptoms

from another standpoint, as being warnings to be heeded, perhaps as being blessings in disguise.

In general it may be said that the severity of a disease varies inversely to the number of symptoms. Some of the most serious diseases manifest their presence by but very few symptoms. On the other hand people in ill health may complain of so many that the physician gets tired listening to the recital—he knows from experience that people who complain of many and vague symptoms are not seriously sick.

Pains and aches throughout the body may mean little, a localized pain may mean much. Recurrent headaches may signify little but a sudden headache in a man who never had headaches before may put the physician on his guard at once—he is apt to think of all sorts of serious consequences. People called neurasthenic often have so many symptoms that they can not readily enumerate them, they require time to think. The really sick man can promptly enumerate and moreover the physician usually finds signs of disease. In the case of small children he may have to rely wholly on signs, on objective symptoms.

A physician often forgets that people have a very vague idea of what symptom names mean, and that a patient's statements regarding the presence or absence of certain symptoms must be accepted more or less guardedly. One must find out what names mean to them. It may seem a very simple matter to ask a long list of questions and find out whether the patient has such symptoms or not, but as a matter of fact it may take much time because one must discover what the patient really means.

Do you have these symptoms? is a familiar question in the advertisements of patent medicines, followed by a long list. Such advertisements as a rule are as common in the newspapers of dirty towns as they are rare in those of clean ones. They refer to states of ill health than to the presence of well-defined disease.

DISCUSSING SYMPTOMS OF ILL HEALTH WITH PATIENTS.

To what extent this shall be done is at times a problem. One may err greatly regarding the attitude of patients, some refuse outright to enter into details regarding their symptoms. One may at times lose an otherwise "good patient" on account of some point that came up incidentally. Naturally a physician may spend much time in "useless discussion" but every now and then he meets individuals with whom discussions are really worth while, they help to clarify ideas. The medical society is ordinarily assumed to be the proper place for discussions, but only too often discussions are about specific diseases rather than ill health of the kind considered in this volume. A physician may prefer to discuss with intelligent patients who have experienced the symptoms and the kind of ill health here discussed. Such a remark applies particularly to the country doctor living in isolation.

In the present case symptoms were frequently discussed, not only their causes but also conditions under which they appear as well as their varied manifestations. One can learn much from intelligent patients. Here I shall briefly mention the chief symptoms of which the last mentioned patient complained on first coming to me, some of which recurred now and then while with me, including some general remarks on symptoms.

ANEMIA. She had a sallow complexion; had been told she had anemia and also "decay of the blood" as a girl. Her complexion had also been explained: "It's the liver." The coloring matter of the blood was approximately three-fourths normal. Sometime after being with me she gradually obtained a "healthy complexion."

The matter of complexion is an important one to women. One can readily understand how if symptoms generally subside there may still be cause for worry and sleeplessness on account of a muddy complexion. Even chronics have periods when they feel comparatively well, but the complexion remains. The remedy for

a muddy complexion is good air and especially exercise in good air. This woman had too good sense to try any of the numerous advertised blood purifiers. She reasoned that if physicians could not give her medicines that would bring a good complexion patent medicines would not be apt to do so.

Anorexia. In a technical enumeration of symptoms loss of appetite would come under this head, just as loss of sleep is listed under insomnia. Loss of appetite is a very common symptom. As already mentioned this patient at times existed on crackers or toast and weak tea. Under such conditions people do not really live, they merely exist. One may see why in the presence of a constantly acting cause all sorts of tonics and appetizers may fail. I did not give her any tonic; the best "appetizer" as well as the best tonic is good air. By watching air conditions, in a short time she was able to eat anything. In the very beginning on coming to me I advised her to eat a little of everything but not to overeat in general nor to overeat on any one thing. That people who have an impaired digestive tract should chew their food thoroughly must be self-evident. A strong young boy may be able to eat anything and everything, at all hours; the sick or feeble and the aged must be careful.

In connection with loss of appetite one should also consider the early morning vomiting which is often due to an effort to bring up accumulated phlegm. Mucus in people living under dusty air is colored, at times being black. It is the solid residue of the air inhaled. It is spat out just as the owl ejects pellets after having extracted the nutriment. A coated tongue is usually considered in connection with loss of appetite but often can be assumed to exist, yet some patients think themselves neglected unless asked to show the tongue.

CHILLS OR CHILLING have been a common symptom and being misinterpreted led to the free use of quinine. People exposed to infected dust who house themselves up very frequently complain of a chilly sensation.

This patient formerly complained much of chills and chilling. On several occasions since with me she complained of chilling; each time the source was traced to dust except once when there was no clear history (or I failed to make the proper inquiry at the time). Ordinarily the chilling comes on promptly after a return from town. She seldom goes to town but must go at times. At first she did not understand about moist weather and filth being tracked indoors where it is pulverized and that although there may be no dust on the streets, the stores may be thickly filled with it. The effects of an ordinary exposure in her case last from 24 to 36 hours, after that the chilly sensations no longer occur. Here is one of my notes for 16 Dec. 1908, at the time when the idea of dust infection was not so fully fixed in her mind:

On coming in she said, "You notice I got a cold." She told how she has been getting along so well since with me, how she had remained away from crowds and bad air, but she had risked going into a crowd on Monday—"when there was no dust on the down town streets." However she found the air in the stores full of it; at the X department store the air was very bad and oppressive and she did not stay long. She breathed easier on getting into the outer air, but on getting home there was again the feeling of oppression, "I felt as though I did not want to be in the house. I opened doors and windows—and that is where I got my cold."

I called for her diary. She had not entered "shopping" (or rather "wanted to shop" for she did not stay) but she entered "got a cold." I asked her to make mention at the proper place of the shopping, showing cause and effect. When she had made the entry she said, "And I thought I was so careful."

I then explained the air conditions of the last two weeks or so, how the deep snow had prevented street cleaning so that there was a great accumulation of filth now tracked into the stores and there pulverized, becoming "powdered poison," to which those susceptible reacted. I told her how some of my old experienced patients, realizing that although there was no dust on the streets,

in fact just the opposite, knew that the dust was in the stores and that it was a very virulent dust, and so they did not go into them. I explained that "inexperienced patients" like herself, those not fully informed, would make just such mistakes and "catch colds," but I felt sure that from now on she would avoid similar repetitions.

I referred to the fact that I had advised her not knowingly to expose herself to dust influences, i. e., simply to prove or disprove my remarks on dust infection; that likely there would be an unwitting exposure—and this is what had now occurred. I expressed my belief that as a new patient she was getting along very well, that she had to learn these things, that there may be an attack now and then in spite of every precaution. During holiday shopping people will run the risk and this may resolve itself into the question of to shop or not to shop.

One day some time later in midwinter when it was quite cold, with ice and snow, she told me of how she enjoyed getting out into the cold and snowy weather, and how good she was feeling, "the best for years and years." She contrasted this state with that of former years when she would house herself up and would stay in only to feel worse, while now if there were times when she did not feel perfectly well she went out and that helped at once. She recognized the fact that there was no necessary relationship between "cold" and "colds" but that such a relationship could readily be established.

Formerly she dreaded a "chill" and especially a so-called "congestive chill" (a term frequently used here and a good one to "scare" patients). "Chills" are now rare, the last one she had did not alarm her at all; she told me of it over the telephone in the most matter of fact way.

Colds. In my own enumeration of the complaints of people in ill health, a "cold" is regarded as a symptom, a symptom of some unusual activity of the body, really an indication that the body is trying to get rid of some foreign matter. This patient had had frequent colds, she has had several since with me. After

all that has been said regarding colds there is no need to enter into details here nor speak of mucus formation commonly called catarrh.

CONSTIPATION. This again is to be regarded as a symptom rather than an affection or disease. It should be kept in mind that in this volume I am speaking of dust victims who can not be considered as diseased. I have purposely ruled out individuals who have well defined disease. I have already mentioned that this patient tried all sorts of laxatives and cathartics. Here it may be said that there are two great classes of remedies among "symptom-prescribers," those that give relief from pain, anodynes and sedatives, and those that move the bowels, laxatives or cathartics. Chronics are often alternately dosed with one kind and then with the other. The anodyne makes them feel better but tends to lock up the bowels, and then cathartics are used to "open the bowels," then the pain returns and the process is repeated. Whether a patient receives such treatment at the hands of the lazy physician or buys patent medicines amounts to the same thing. I have already referred to the fact that this patient had not used patent medicine. But she had had her full share of "symptom prescribing." I may add that shortly after she became my patient she required less and less laxative and in time none whatever, excepting after an acute exposure. Here again I would say the best anti-constipation remedy is good air and especially exercise in good air.

Constriction or Oppression of the Chest. A peculiar sensation frequent among dust victims is described by this term. The sensation may be a mere sense of discomfort or actual pain. In some where there is marked pain there is often a history of an injury to the chest, as in the present case where there was a fall on the breast bone. The pain may be marked after an acute exposure and especially after dusty housecleaning.

Cough. This is a very common symptom as one may naturally expect. The primary object of cough is to get rid of irritating

matter, which may be readily brought up with the free secretion of mucus but with difficulty in the case of a "dry cough."

"Cystitis," or rather "irritable bladder," should perhaps also be mentioned. This is a condition that frequently occurs in dust victims. They may worry for fear they have kidney disease. A little codeine or heroin that allays the cough of an irritable throat usually also allays an irritable bladder.

DEAD FINGER SYMPTOM. This is a symptom that goes by various names; at times the hand is described as "being asleep." It is often described as a feeling of "pins and needles." Numbness may extend over an entire limb. As is well known, sleeping with the arms under the head may bring on this symptom.

DREAMING. The conditions under which one dreams much or little or whether the dreams are agreeable or disagreeable is an interesting subject. This patient used to have disagreeable dreams and also had many sleepless hours when she would lie awake and think of her troubles. Not knowing the significance of her symptoms and imagining the worst, she would fear all sorts of terrible diseases.

DEVNESS OF THE SKIN. This is frequent in cases where there is a sallow color. There may be a fine scaling off similar to that found on the head in dandruff. The best remedy is good air. That beauty specialists find many dupes among dust victims has already been referred to.

DYSPEPSIA. This term as used in this volume stands for a symptom, not for a disease. Individuals who have many symptoms, in other words who complain of all sorts of disturbances, likely also complain of disturbances of the stomach and alimentary tract. The term of course is very indefinite. There may be more or less pain referable to the stomach, with gas formation and the presence of acid or disagreeable tasting fluid coming up into the mouth. If there is much mucus there may be vomiting and retching. This was formerly a common symptom in this patient, but as

already mentioned now she can eat anything and everything, "even radishes," something about as difficult to digest as one can find.

FLATULENCY. A very common symptom in dust victims is flatulency, especially common in people living under city conditions. It almost seems that people living under simple life conditions do not complain of this symptom at all. It would be interesting to look up some of the common symptom names, when they first came into use and under what conditions; in other words, to what extent are they due to unsanitary city conditions? That in turn would bring up the question of the sanitary condition of the early cities, as those of ancient Greece; many medical terms go back to the Greeks. That this patient was formerly annoyed by this common symptom need scarcely be mentioned.

EMACIATION. This may be considered an important symptom or indicator of bodily conditions, not necessarily alarming. One may naturally expect loss in weight in people who eat very little. For the same reason there may be very little bowel movement and yet some people take laxatives and cathartics.

FLUSHING. This is an annoying symptom and formerly she complained much, as far back as she can remember, yet she never traced any connection between it and exposure to bad air. She readily saw the connection after attention had been called to it. To some the flushing may indicate the presence of fever, yet the thermometer may not show any rise of temperature or only a slight transient one.

HEADACHE. Headache is a term that covers a great variety of painful conditions about the head. There are all sorts of headache and all degrees of intensity of pain located in any or every part of the head. At times a previous injury seems to determine a localization. Headache is a very common symptom following an acute exposure to bad air. It may sometimes be the only symptom. At present it is customary to examine all those complaining of headache for defects in the eyes but very few examine air conditions to which a patient has been exposed, in my experience one

of the commonest causes of headache. The only "pain killer" this patient has had since with me was a few headache tablets.

INSOMNIA. Sleeplessness, as already mentioned, is a common symptom in dust victims, especially of the "nervous kind" who may lie awake at night thinking over their symptoms and wondering what it all means. Insomnia usually spells worry. Ordinarily we think of insomnia as a curse but it may be a blessing in disguise, telling us to seek the cause and avoid it. To the brain worker, especially to the literary man, insomnia, and rushes of thought that are apt to accompany it, may be of service in his work. He may even find a lot of material in dreams and in "subconscious cerebration." Dust victims when they realize what the ordinary symptoms mean, that they are warnings and should be heeded, usually cease to lie awake, assuming that they are getting better air than they had.

Joint Pains. Dust victims may complain of an aching throughout the body or there may be a localization about the joints, and then we are apt to hear of "rheumatism," if not of gout, or the terms rheumatic and gouty are used. The term uric acid is also used. The idea that uric acid is a factor in ordinary joint pains has been generally abandoned; it applies only to the exceptional case. But the patent medicine men are using the "uric acid theory" to a large extent, some explain all pains and aches on the assumption of uric acid in the blood. This patient after all other pains and aches had disappeared still complained of a localized pain in the neck; this was finally traced to an injury due to the fall of an ice chest lid. An acute attack of dust infection may now manifest itself there before any other symptoms appear.

LACK OF AMBITION. This is a term often used by dust victims in describing their sensations. The term at times is used as a synonym for the "Blues." It is interesting to study what may be called the mental symptoms of dust victims, how the mind reacts under good and bad air. There may be stimulation of the mental faculties or the opposite. Some people lead such a mere

vegetative existence, perhaps driven by necessity in the struggle for existence, that they have no time to observe what is going on in the mind. One must distinguish between sensory and motor There may be a great desire to do, the mind is active, and yet there is a lack of motor power, or the opposite may be true. We hear much regarding "suggestion" and the question to what extent people can be induced to act upon "suggestion" is a very interesting one. One may suggest, in fact, one may outright lie to a patient in chronic ill health, telling him he is feeling better and he may imagine he is, but the effects do not last long. In my own work I do not use "suggestion." I reason with patients and explain, in other words, I teach them about the causes and nature of their ill health, and if they adopt the advice that is the outcome of a study of similar cases they are apt to be benefited as case reports in this volume show. The present patient has had all sorts of moods or mental states and she now clearly realizes the influence of air conditions.

Muscular Pains. Perhaps everybody has an idea what this expression means. It is used in distinction to pains that are located at the joints, not to speak of internal pains. But at times it is difficult for a physician to determine where the pain really is. The term is as indefinite as rheumatic or neuralgic, names which go back to the childhood of Medicine, to the ancient Greeks. Pain as ordinarily used by the physician may refer to any painful sensation, from a mere sense of discomfort up to a pain so severe that it may kill. Pain of course is one of the commonest symptoms of ill health and of disease. In the great majority of cases pain is to be regarded as a blessing; it gives us warning that something is wrong. If we heed the warning and discover why there is pain we may be able to prevent it. To use a "pain killer" is the worst form of treatment. The pain of such a disease as cancer belongs to a wholly different category.

NERVOUSNESS. This is a term frequently used by physicians as well as by patients. Sometimes we are referred to as a nervous

people, in opposition to the primitive inhabitants, the Indians who were stoical. I imagine that if an Indian were placed in the heart of a busy city and compelled to shift for himself he would quickly lose his stoicism in attempting to avoid dangers, being run down in the street, and in exercising his wits to make a living. The "guttersnipe" is quite different from the "country clod" on account of his environment. From these remarks one might infer that the remedy for too much nervousness is more or less simple life. Perhaps after all "simple life" spells good air. People differ largely on account of the kind of air they inhale. One hesitates to make such a statement but here it is merely thrown in as a possible explanation—my patient found it explained her so-called neurasthenia.

PALPITATION. Consciousness of the heart's action may appear in any one on undue exertion or from excitement. In some it comes on very readily and still there may be no complaint of ill health. It is often annoying to nervous individuals. When the heart is weak on account of disease or merely from lack of exercise, palpitation may occur on the least exertion; it is always wise to get the opinion of a good physician concerning the probable significance.

The patient here under discussion at times had palpitation with more or less oppression of the chest, especially after her weekly housecleaning. I quote from my notes:

"I used to suffer every time I cleaned house. I cleaned up every Friday. It used to make me feel so bad and gave me such a peculiar sensation in the chest so that I wanted to put my hand on my chest, like this, and there would be a peculiar sensation about the heart; it would not be a flutter really but it was irregular, and I used to think it was the movement [of sweeping], and then at times I thought it might be the dust, that this might have something to do with it. I used to spit up black."

She had experimented to determine whether it was brisk movement that brought on palpitation but found it was just as bad with very slow sweeping; she could not understand it. The ex-

planation is of course easy: She swept with the house closed and slow sweeping meant a longer exposure and more inhalation of dust, with shallow breathing, while brisk work meant a shorter exposure but with deep breathing, the end results being the same. With doors and windows open and the wind blowing through rapid or slow work made no difference.

The simplest form of spitting black is that which comes on almost immediately after an acute exposure, as in handling dusty coal at the furnace. There may be a free mucus formation which entangles the coal particles and black spit may be marked. On the other hand is the black spit that appears after several days' exposure, as where there has been a continued exposure to smoky and dusty air, when a good air resident, for instance, has spent several days in a smoky city. There may be no spitting while in the city; whatever is inhaled remains in the lungs. During this time the individual may feel bad and finally the black spit comes up. Again, the exposure may last only a few hours, as going to a theater with much infected dust; the process of black spitting may be inhibited for several days. In the meantime the individual complains.

As a rule the black spit most readily comes up early in the morning, in some while still in a recumbent position, while there is little gravity to overcome; in others as soon as they get up, aided by movement. Every one must determine for himself under what conditions he spits black.

Perhaps the above list embraces the chief symptoms of which people ordinarily complain. Among other symptoms may be mentioned tinnitus, a buzzing in the ears, often marked in dust victims; also sensations of dizziness or vertigo, this latter however is more apt to occur in elderly people. Vomiting and worry as symptoms have already been referred to.

This patient typifies what I frequently see: a large and varied list of symptoms, apparently "too numerous to mention," and yet in a short time, depending chiefly on seasonal and environmental influences, symptoms will disappear, and then the patient

has nothing to complain about. The patient may question the need for further health supervision. In order to get continued notes a physician may offer medical supervision for a nominal fee. Unless there is some agreement there may be no further reporting, or the patient may return acutely ill, and then the physician may spend a lot of time in determining present conditions and what happened previously.

After the brief account of the preliminary investigation and discussion of symptoms, there should now follow a chronological account covering a period of several years. At first the patient reported weekly; gradually the time was increased to once a month and more recently there was an agreement that she should continue indefinitely without reporting but to report promptly if anything went wrong.

There were many discussions on various phases of ill health, at first wholly relating to herself but in time when she had "nothing to report" about herself there was developed a habit of discussing some of her friends who complained of ill health, which in some cases she interpreted in the light of her own experiences. I have a lot of what may be called secondhand case notes. But one never knows to what extent one can rely on secondhand statements relating to ill health and disease. Naturally the statements of a physician have a higher degree of probability than those of an uneducated layman. But between the statements of an "educated dust victim" and a physician who has never given the subject of dust influences any attention one might be inclined to rely on the former.

In the course of years there were any number of incidents that occurred which showed that the assumption of dust infection was a good one. It enabled the patient to reduce her ill health to a minimum, or in other words to maintain health. After we were well acquainted I asked her to give me her autobiography. She promptly wrote it out in the missionary spirit, to the best of her ability. Quite naturally people can give only an imperfect

account of earlier years, many can not give an account of what occurred during the past year. Need it be added that the physician who does not keep notes on his patients is also unable to give a good account?

A case of this kind can not be done justice in a few pages; it would really require a volume. But if one characterizes too closely the individual would be identified in a small community where everybody knows everybody else, and so the matter of fuller biographies must be deferred to subsequent years.

PUZZLING CASES.

Cases that are puzzling, where one does not always know just what is best to do, constantly arise. I might mention one.

CASE REPORT. Middle-aged woman from an adjoining county, complained of chronic ill health for years, ever since she was married. On investigating I found she was a descendant of poor white mountaineer stock, wholly unadapted to life under air conditions found in most of our villages, towns and small cities. She had always lived in the country but on getting married removed to a small town; her ill health soon led her to lead a life of seclusion. Naturally she "doctored." She had had all sorts of explanations, all sorts of diagnoses, until in the end she believed in none, that it was all guess work. Moreover she had lost faith in doctors and medicines—but not quite all for she was induced to consult me by some patients living in her neighborhood. I quickly discovered that she was a marked dust victim of the kind just considered and tried to explain what that meant and what she should do and what she should not do in order to reduce symptoms to a minimum; of course I proposed health supervision. She had a daughter who was following in her footsteps. She reasoned that if she herself could be helped likely there would be help for her daughter.

One day she came in accompained by her husband. He was a stout, robust man, florid faced, of the so-called apoplectic type. I

at once saw that he was opposed to doctors—he had good reasons. He had spent thousands of dollars on account of his wife's ill health and had repeatedly moved in the hope that a change would help her. Naturally I tried to interest him in the matter of dust influences. In my explanation of her ill health and how this had been misunderstood, I incidentally remarked that she belonged to the "low pressure" type of individuals while he himself quite likely belonged to the "high pressure" type. He regarded this as a compliment. Out of curiosity I took his blood pressure and found it to be excessively high, in fact he might be considered in constant danger of an apoplexy, and yet he deemed himself "thoroughly healthy," twitting his wife about her low pressure.

Now here is a case for medical ethics. What is the duty of the physician in such a case? The man was not my patient; in fact he was opposed to all doctors. If I spoke of the dangers of a high blood pressure it would greatly worry the wife, my patient. Yet both should know that there was imminent danger, so that the man might set his house in order. What was my duty? One is apt to get all sorts of opinions on asking the question.

Such or similar cases are constantly occurring. One learns in the course of time what to do—but what one does may not conform to what Mrs. Grundy says. Such a case gives opportunity for making all sorts of comments. One could quickly fill a long chapter.

All that "medical science" can do in some instances is to point out the why and the wherefore. A "cure" may or may not result from the advice of the physician who works out a case to his own satisfaction. To what extent a physician will humor disagreeable patients and still more disagreeable relatives depends, as all experienced chronics know, shall we say on circumstances?

And as to ethics, it is easy to say, Do unto others as you want others to do unto you. If a physician knows that medicine can not cure should he refuse to give any to patients who want it? On the other hand if people are opposed to physicians, shall he try to instruct them? Shall we insist that the physician does have a

mission, one other than giving drugs, that good advice may be of more value than all medicine?

How do people look upon the "prophet of evil," upon the physician who makes gloomy prognoses? The physician himself may want to know about his own future, about the probable outcome, but many people do not want to know, they want to live on in ignorance, not only about themselves but also about relatives. In this connection I may say that I have had patients, or applicants for professional services, who in the beginning said if anything serious was found not to tell them. Some physician may not want such individuals as patients at all.

While examining the sputum of a preacher's wife, I asked him regarding the duty of the physician, whether he should always tell the truth. "Of course, always." A few moments later when I announced the presence of tubercle bacilli, that his wife had consumption, he became greatly agitated and said it would never do to tell her the truth, completely reversing his opinion in the course of a few minutes.

I might add that I failed to impress the couple above cited with the importance of health supervision. The wife expected to be cured by the use of medicine and the husband was opposed to "doctoring." She soon drifted out of my hands. The man did not become my patient at all.

WEEDING OUT ON ACCOUNT OF ILL HEALTH AND DISEASE.

The following cases coming under the head of Membranous Catarrh of the Intestines may be cited to show how families and individuals are weeded out.

A middle-aged woman brought her nearly grown daughter to me, saying she feared consumption because her father, the woman's first husband, had died from tuberculosis. The girl had had much ill health in school and complained more or less constantly; she was pale, although well developed. Good air advice helped her very much. matter, which may be readily brought up with the free secretion of mucus but with difficulty in the case of a "dry cough."

"CYSTITIS," or rather "irritable bladder," should perhaps also be mentioned. This is a condition that frequently occurs in dust victims. They may worry for fear they have kidney disease. A little codeine or heroin that allays the cough of an irritable throat usually also allays an irritable bladder.

DEAD FINGER SYMPTOM. This is a symptom that goes by various names; at times the hand is described as "being asleep." It is often described as a feeling of "pins and needles." Numbness may extend over an entire limb. As is well known, sleeping with the arms under the head may bring on this symptom.

DREAMING. The conditions under which one dreams much or little or whether the dreams are agreeable or disagreeable is an interesting subject. This patient used to have disagreeable dreams and also had many sleepless hours when she would lie awake and think of her troubles. Not knowing the significance of her symptoms and imagining the worst, she would fear all sorts of terrible diseases.

DEVNESS OF THE SKIN. This is frequent in cases where there is a sallow color. There may be a fine scaling off similar to that found on the head in dandruff. The best remedy is good air. That beauty specialists find many dupes among dust victims has already been referred to.

DYSPEPSIA. This term as used in this volume stands for a symptom, not for a disease. Individuals who have many symptoms, in other words who complain of all sorts of disturbances, likely also complain of disturbances of the stomach and alimentary tract. The term of course is very indefinite. There may be more or less pain referable to the stomach, with gas formation and the presence of acid or disagreeable tasting fluid coming up into the mouth. If there is much mucus there may be vomiting and retching. This was formerly a common symptom in this patient, but as

already mentioned now she can eat anything and everything, "even radishes," something about as difficult to digest as one can find.

FLATULENCY. A very common symptom in dust victims is flatulency, especially common in people living under city conditions. It almost seems that people living under simple life conditions do not complain of this symptom at all. It would be interesting to look up some of the common symptom names, when they first came into use and under what conditions; in other words, to what extent are they due to unsanitary city conditions? That in turn would bring up the question of the sanitary condition of the early cities, as those of ancient Greece; many medical terms go back to the Greeks. That this patient was formerly annoyed by this common symptom need scarcely be mentioned.

EMACIATION. This may be considered an important symptom or indicator of bodily conditions, not necessarily alarming. One may naturally expect loss in weight in people who eat very little. For the same reason there may be very little bowel movement and yet some people take laxatives and cathartics.

FLUSHING. This is an annoying symptom and formerly she complained much, as far back as she can remember, yet she never traced any connection between it and exposure to bad air. She readily saw the connection after attention had been called to it. To some the flushing may indicate the presence of fever, yet the thermometer may not show any rise of temperature or only a slight transient one.

HEADACHE. Headache is a term that covers a great variety of painful conditions about the head. There are all sorts of headache and all degrees of intensity of pain located in any or every part of the head. At times a previous injury seems to determine a localization. Headache is a very common symptom following an acute exposure to bad air. It may sometimes be the only symptom. At present it is customary to examine all those complaining of headache for defects in the eyes but very few examine air conditions to which a patient has been exposed, in my experience one

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people, in opposition to the primitive inhabitants, the Indians who were stoical. I imagine that if an Indian were placed in the heart of a busy city and compelled to shift for himself he would quickly lose his stoicism in attempting to avoid dangers, being run down in the street, and in exercising his wits to make a living. The "guttersnipe" is quite different from the "country clod" on account of his environment. From these remarks one might infer that the remedy for too much nervousness is more or less simple life. Perhaps after all "simple life" spells good air. People differ largely on account of the kind of air they inhale. One hesitates to make such a statement but here it is merely thrown in as a possible explanation—my patient found it explained her so-called neurasthenia.

PALPITATION. Consciousness of the heart's action may appear in any one on undue exertion or from excitement. In some it comes on very readily and still there may be no complaint of ill health. It is often annoying to nervous individuals. When the heart is weak on account of disease or merely from lack of exercise, palpitation may occur on the least exertion; it is always wise to get the opinion of a good physician concerning the probable significance.

The patient here under discussion at times had palpitation with more or less oppression of the chest, especially after her weekly housecleaning. I quote from my notes:

"I used to suffer every time I cleaned house. I cleaned up every Friday. It used to make me feel so bad and gave me such a peculiar sensation in the chest so that I wanted to put my hand on my chest, like this, and there would be a peculiar sensation about the heart; it would not be a flutter really but it was irregular, and I used to think it was the movement [of sweeping], and then at times I thought it might be the dust, that this might have something to do with it. I used to spit up black."

She had experimented to determine whether it was brisk movement that brought on palpitation but found it was just as bad with very slow sweeping; she could not understand it. The explanation is of course easy: She swept with the house closed and slow sweeping meant a longer exposure and more inhalation of dust, with shallow breathing, while brisk work meant a shorter exposure but with deep breathing, the end results being the same. With doors and windows open and the wind blowing through rapid or slow work made no difference.

The simplest form of spitting black is that which comes on almost immediately after an acute exposure, as in handling dusty coal at the furnace. There may be a free mucus formation which entangles the coal particles and black spit may be marked. On the other hand is the black spit that appears after several days' exposure, as where there has been a continued exposure to smoky and dusty air, when a good air resident, for instance, has spent several days in a smoky city. There may be no spitting while in the city; whatever is inhaled remains in the lungs. During this time the individual may feel bad and finally the black spit comes up. Again, the exposure may last only a few hours, as going to a theater with much infected dust; the process of black spitting may be inhibited for several days. In the meantime the individual complains.

As a rule the black spit most readily comes up early in the morning, in some while still in a recumbent position, while there is little gravity to overcome; in others as soon as they get up, aided by movement. Every one must determine for himself under what conditions he spits black.

Perhaps the above list embraces the chief symptoms of which people ordinarily complain. Among other symptoms may be mentioned tinnitus, a buzzing in the ears, often marked in dust victims; also sensations of dizziness or vertigo, this latter however is more apt to occur in elderly people. Vomiting and worry as symptoms have already been referred to.

This patient typifies what I frequently see: a large and varied list of symptoms, apparently "too numerous to mention," and yet in a short time, depending chiefly on seasonal and environmental influences, symptoms will disappear, and then the patient

has nothing to complain about. The patient may question the need for further health supervision. In order to get continued notes a physician may offer medical supervision for a nominal fee. Unless there is some agreement there may be no further reporting, or the patient may return acutely ill, and then the physician may spend a lot of time in determining present conditions and what happened previously.

After the brief account of the preliminary investigation and discussion of symptoms, there should now follow a chronological account covering a period of several years. At first the patient reported weekly; gradually the time was increased to once a month and more recently there was an agreement that she should continue indefinitely without reporting but to report promptly if anything went wrong.

There were many discussions on various phases of ill health, at first wholly relating to herself but in time when she had "nothing to report" about herself there was developed a habit of discussing some of her friends who complained of ill health, which in some cases she interpreted in the light of her own experiences. I have a lot of what may be called secondhand case notes. But one never knows to what extent one can rely on secondhand statements relating to ill health and disease. Naturally the statements of a physician have a higher degree of probability than those of an uneducated layman. But between the statements of an "educated dust victim" and a physician who has never given the subject of dust influences any attention one might be inclined to rely on the former.

In the course of years there were any number of incidents that occurred which showed that the assumption of dust infection was a good one. It enabled the patient to reduce her ill health to a minimum, or in other words to maintain health. After we were well acquainted I asked her to give me her autobiography. She promptly wrote it out in the missionary spirit, to the best of her ability. Quite naturally people can give only an imperfect

account of earlier years, many can not give an account of what occurred during the past year. Need it be added that the physician who does not keep notes on his patients is also unable to give a good account?

A case of this kind can not be done justice in a few pages; it would really require a volume. But if one characterizes too closely the individual would be identified in a small community where everybody knows everybody else, and so the matter of fuller biographies must be deferred to subsequent years.

PUZZLING CASES.

Cases that are puzzling, where one does not always know just what is best to do, constantly arise. I might mention one.

CASE REPORT. Middle-aged woman from an adjoining county, complained of chronic ill health for years, ever since she was married. On investigating I found she was a descendant of poor white mountaineer stock, wholly unadapted to life under air conditions found in most of our villages, towns and small cities. She had always lived in the country but on getting married removed to a small town; her ill health soon led her to lead a life of seclusion. Naturally she "doctored." She had had all sorts of explanations, all sorts of diagnoses, until in the end she believed in none, that it was all guess work. Moreover she had lost faith in doctors and medicines—but not quite all for she was induced to consult me by some patients living in her neighborhood. I quickly discovered that she was a marked dust victim of the kind just considered and tried to explain what that meant and what she should do and what she should not do in order to reduce symptoms to a minimum; of course I proposed health supervision. She had a daughter who was following in her footsteps. She reasoned that if she herself could be helped likely there would be help for her daughter.

One day she came in accompained by her husband. He was a stout, robust man, florid faced, of the so-called apoplectic type. I

they would as soon be dead as live in the country or small town. In at least one case I told a young woman that to remain in the heart of the city was equivalent to committing suicide. Not having any data regarding her movements, I am unable to say whether my prediction was verified. The couple was childless and there at least was "race suicide."

At the end of this series I shall briefly refer to the history of a physician. He was a country boy but managed to get sufficient education to go to medical college and get his degree. The college was in one of the smaller cities where classes are not large and that means among other things that air conditions are not as bad as in some of the large crowded cities. After several years of country practice, he decided to specialize. He took a postgraduate course and then located in a county-seat, a regular spitter's town. Naturally his office was in the very heart of the city. His home was also in the heart of the city. That meant he was inhaling infected air twenty-four hours each day. Soon he began to complain. Like other physicians, he asked advice of his colleagues and got all sorts of opinions, finally he came to me. After getting his history. I came to the conclusion he was reacting to his environment, that he was a dust victim, and that he was not fitted to practice medicine in the heart of an unsanitary city. That was all new to him. "I was never taught anything like that in medical college." I advised him to observe himself and if my diagnosis was verified either to go to the suburbs or back to the country. He continued some time longer and then one day he packed up and went to a little country town. He soon again had good health. The assumption that he was a dust victim was correct.

There is a current belief that the best physicians are drawn to large cities. Cases like the above show that there is another side to the story. Many good men are living in the country because they can not bear city life. Or again it is the doctor's wife or a child that compels him to stay away from large cities. The

physician may or may not know what is the real factor, but he may know that country life agrees while city life does not. Being a city doctor may mean that a man can stand life under city conditions, that he can inhale a lot of bad air with impunity—and this may be the very reason why many city doctors fail to understand the people who do react. Because of this there is quackery of all kinds and city people have less faith in the doctor than country people. Physicians themselves who do not understand that they are dust victims may have lost confidence in "medical science" as in the case mentioned under dyspepsia. Will such a man go to the large city where he has an opportunity of seeing and treating many cases, or will he be content to remain in a small community on account of his own ill health?

This is a railroad town and analogous cases are common among railroaders. Out of the many who enter the service comparatively few are fully adapted to live in smoking cars.

Some of the most annoying cases to treat are railroad people. When the wife is susceptible to dust infection and the husband is immune, he constantly makes fun of the doctor who says dust is injurious. He simply can not understand the ill health of his wife and when a man has been paying thousands of dollars "uselessly" he may object to his wife taking treatment from a "crank doctor."

At the other extreme is the man who finds himself unadapted when he is advanced. He may have a wife who is immune and she is the one who is unable to understand why her husband can not be a passenger conductor. From the society standpoint, a man's business may be important to the wife and children and they may insist that he attempt to get "used to it," but only too often the man fails completely.

Who Makes the Best Family Physician? Dr. — is an old family practitioner in a distant city. He has the reputation of being a reliable man; he has had much experience among sick people, reaching back to the days when prevalent ill health was largely due to malaria. He has one son, a boy who is still in the high school. This son means to be a doctor; he intends to go to

X Medical School, by many supposed to head the list of our medical schools. People say he will make a good doctor, "it is in the family." Let us examine into the matter.

What do we mean by a good doctor? Hippocrates twenty-five hundred years ago characterized him fairly well; among other things he says of the art of medicine:

"Whoever treats of this art should treat of the things which are familiar to the common people. For of nothing else will such an one have to inquire or treat, but of the diseases and the causes of their origin and departure, their increase and decline, illiterate persons can not easily find out themselves, but still it is easy for them to understand these things when discovered and expounded by others. For it is nothing more than that every one is put in mind of what has occurred to himself."

The young man is ambitious, proud of the fact that his father is a doctor and he hopes to get the best medical education to be had. Why should he not make a good doctor? Here are some arguments that go against the popular conception.

Old Dr. — had six children, only this one, the youngest, reached high school age; the others died early from the "diseases of civilization." This one son has "robust health." He will likely be able to complete the high school course and, being the survival of the fittest, he will likely be able to complete a medical college course. The weak in his family have been killed off.

Now the medical college where he intends to go is one that gives special attention to diseases—common ill health is apparently not worth studying. If he goes to that college he will be well grounded in many diseases. Then what will he become, a specialist or a teacher or a good doctor, one that treats the ills of the common people? The chances are he will not be satisfied in a small town but will go to a large city, and, with the prestige of his college, concern himself only with the well-to-do. Having "robust health" will he be able to understand common ill health that can not be dignified by the name of disease? If he does go to a small community he will lead a monotonous life, there will be little to stimulate him—but in spite of all that he may turn out to be a good doctor. Time will tell.

Now and then the physican meets young women who want to become trained nurses, they go to a training school and get a good training, and then perhaps go back to their home town. Perhaps the first case will be in a family that lacks all the modern household conveniences—the poor do not, can not, employ a trained nurse at all. Is it any wonder that some quickly become discouraged and are ready to try something else?

A short time ago I read of a school that trains servant girls. They receive all sorts of instruction, including the use of the vacuum cleaner and the automatic regulation of the furnace and cooking by electricity. Is it any wonder that such a graduate is greatly discouraged on getting into active work where things are radically different from what she expected?

What the servant girl needs, and what the trained nurse needs, and what the doctor needs is not a knowledge of the refinements but a good knowledge regarding the common everyday things found in every day homes, they should not be above the "little things" of daily life.

Is it not true that those who get the "best education" and the "best training" are often dissatisfied with the common humdrum tasks of daily life, always dissatisfied?

VI.

NERVOUS PROSTRATION.

Nervous Prostration is the third of our Triad of National Diseases. But it is not an entity, it is not a definite disease that has characteristic earmarks by which it may be identified, no more than dyspepsia. All sorts of cases are grouped under the term. At the one extreme are what must undoubtedly be regarded as cases of nervous prostration, at the other extreme cases that are anything but that. Neurasthenia is a synonym; it is a good mouthfilling word. Another synonym is overwork, this is especially used in the case of school children and of men who use their brains rather than their hands. We also hear of nervous exhaustion, nervous debility and psychasthenia. The term hysteria is also usually a synonym, but is rarely used because people object to it; the doctor who makes such a diagnosis is apt to lose his patient.

The Blues is also used. People with catarrh and dyspepsia often have the Blues, thinking their condition hopeless and often imagining the presence of diseases that will soon carry them off. The catarrh victim is apt to imagine he has or is going to have consumption, while the dyspepsia victim thinks more or less of cancer of the stomach. In chronic dyspepsia there are a large number of symptoms, many of them nervous if not mental, and one may speak of many dyspeptics as being also cases of neurasthenia. Cases shade off and symptoms are curiously linked together and quite naturally people receive all sorts of diagnoses at the hands of physicians.

Diseases are classifiable according to their causes or according to their symptom-complexes or syndromes. Tuberculosis, typhoid fever and malaria are diseases that can be classified according to the active cause and the cause can be readily found by any qualified physician. In such cases there can be no doubt of the diagnosis. There will be no disagreement of opinion as to what is the

matter. On the other hand diseases based on symptomatology or group of symptoms always leave room for doubt. The cases cited in this volume are of the kind where diagnoses are based on symptoms and where the opinions of physicians have often greatly differed. The one common factor is that the symptoms are traceable to bad air.

People often regard symptoms as disease. Many look upon cough as a disease curable by medicine. Asthma and dropsy not many years ago were looked upon as diseases; by the people they are still so regarded. Some diseases have a very definite cause, as tuberculosis, typhoid fever, malaria. In other diseases it may be difficult to find any cause at all, but in the course of time it may be found that diseases that seem to have no definite cause do have one. Men are constantly at work trying to find causes. Just now there is an active search for the cause of poliomyelitis.

Catarrh as already mentioned may be due to many and varied causes. The respiratory mucous membranes of some individuals are very readily irritated. Dyspepsia also has many causes, or in other words, all sorts of causes bring on disturbances of the alimentary tract to which the name of dyspepsia is given. Nervous prostration also has a multitude of causes. Men have singled out certain causes and written books showing how people react, but, strangely enough, one very common cause of American Nervousness or Neurasthenia is usually overlooked.

Among Benjamin Franklin's writings are many notes regarding colds. He evidently intended to write a treatise on the subject but did not live long enough to do it. The amount of data he brought together is really remarkable. He evidently had a better insight into colds than the physicians of his time. It is the man who is himself subject to colds who gives special attention. Benjamin Franklin might be considered our first pure air advocate.

The term neurasthenia was first used, or at least brought into general use, by an American physician, George M. Beard, who died prematurely. Reading between the lines, one sees how he

wrote all around the cause, or the reason, why this affection is so common in the United States. Had he lived longer he likely would have traced the relationship of cause and effect.¹

The subject of neurasthenia or nervous prostration is a vast one; I can not go into details here. I shall content myself with citing briefly a few case reports which may bring out some points. Neurasthenia or nervous prostration is so common that everybody has an idea what it is, just as everybody knows about colds and catarrh and dyspepsia. There is no need to give any description nor to detail symptoms that go with it.

In taking up this group I must again confess my ignorance as in the case of dyspepsia. I did not understand early cases, particularly those that were not subject to colds and catarrh, but when I found that good air advice benefited nervous symptoms as well as coughs and colds, I began to suspect that dust influences might have something to do with symptoms of nervous prostration so-called.

Neurastheniacs (or neurasthenics) are people par excellence who are embittered against doctors. As a rule they have tried everybody and everything, being still uncured they often are very bitter. Because of their antagonism many physicians give them scant attention; some want nothing to do with them at all; others charge prohibitive fees; still others give bitter nasty medicine that drives them away. In the case of the rich the physician may swallow his pride and humor the patient.

Among my earliest applicants for professional services on coming here was a woman approaching middle age, clerk in a down town store. She had a sharp tongue and did not have a good word for any of the local physicians. I knew that if I did not cure her I would also come in for a tongue-lashing. Although people regarded me as a "specialist in nervous diseases" (from the fact that I had been connected with Insane hospitals for sev-

¹ This is a subject that I discussed before the Section on Nervous and Mental Diseases of the American Medical Association, 1905.

eral years), I had so little confidence that I could benefit her, not to speak of curing, that I did not accept her as a patient at all. One may at times give some good advice or attention and a prescription and then tell the applicant not to return; in that way the individual may leave without "hard feelings." One may escape a tongue-lashing although one runs the risk of being regarded as "no better than the rest," for a prescription for medicine likely would not benefit much. How can medicine cure a reaction due to an unsanitary environment?

I recall another somewhat similar case coming a year or so later where I named a prohibitive fee to get rid of the woman. She said she would consider the matter but never returned. Subsequently she referred several well-to-do people through whom I learned that she considered me "a good doctor but too expensive for poor people." Need it be added that the poor woman who must clerk in a store, constantly exposed to infection, can not live up to pure air advice, while a well-to-do housewife living in a clean suburban home may readily follow such advice and be benefited? The physician meets all sorts of people; from agreeable to disagreeable, from those fully able and willing to follow advice to those of the opposite kind; which will he choose?

But there is another side to this story. Many of the old chronics are neglected. They are not studied and because of this there can be no good advice. Many of these old chronics are dust victims, something I did not at first know. Moreover I had little patience with a certain class of people, those that are commonly called imaginary ill or hysteric or "nothing the matter."

Why do people come to the doctor at all? Is not something the matter? If a physician can not find a lesion, something wrong, is he justified in speaking of imaginary ills? If the patient says he has a headache or has a pain in the chest, the physician must take his word for it; he may be wholly unable to ascertain the truth. Similarly with people who have all sorts of symptoms which are beyond the ken of the physician. The complaints of some neurastheniacs are legion and yet there may be nothing defi-

nite on which one can put his finger and, like the surgeon, say, Here is the difficulty. When a physician does take an interest in some of these neglected people and gets their confidence and gets them interested in observing themselves and their surroundings, such patients become a mine of information. They may lose their irritability and become the doctor's best friends. Many lie awake at night worrying about their symptoms; they imagine all sorts of things. When they once properly understand they cease to worry, and that of itself has a good influence on sleeplessness.

Many people lie awake a large part of the night. Why? The conditions under which a neurastheniac is sleepless is itself an interesting problem. Not to go into details here it may be said that as a rule neurastheniacs are able to sleep under good air conditions.

Among my early male patients was a farmer approaching middle age. I regarded him as a neurastheniac—the term then served as a sort of catch-all, all obscure nervous or mental cases were referred to it. His own relatives regarded him as "imaginary ill" and as being a worthless, good-for-nothing fellow. That the man was a dust victim wholly unadapted to town life (which he had tried repeatedly but always went back to the farm) I did not realize until long after he left me.

A physician is often at a loss to know how far to go in reporting cases. People leading uneventful lives may not furnish "case reports" or biographies worth giving. On the other hand people with eventful lives are usually those standing out in a community, and if one characterizes them too closely they are readily identified. Then too one hesitates to write about people who in the course of years have become good friends. Often before there was a mutually satisfactory relationship of physician and patient there may have been a number of disagreeable incidents. Neurastheniacs often have sharp tongues. Such remarks of course also apply to "disagreeable dyspeptics."

(It may be worth mentioning that this manuscript has been passed around among several professional friends and that some quickly recognized some of the cases mentioned, indeed some had been called in consultation, but I feel confident that none of these physicians will reveal names. Furthermore none asked regarding the names of individuals who were wholly strange to them, that is, where they did not suspect having met the individuals. In a general way it may be said physicians are interested in "cases," not in individuals. They care nothing for names. In case reports in medical journals names are never given.)

Clerks in stores are scarcely considered brain workers and yet when they give out, when health fails, some physicians speak of nervous prostration. According to my observations, it would be more proper to speak of overwork, and "overwork" here can be used in a dual sense: First, on account of long hours, when clerks begin early and work until late at night. All recognize that long hours may produce ill health, but in this community stores are closed at six in the evening, one can scarcely speak of overwork on this account. Second, one can speak of overwork of the defences of the body in trying to get rid of infection. This is particularly true of crowded stores where little or no attention is paid to ventilation.

The clerk who is subject to colds and catarrh is not apt to retain his position long. If there is much loss of time on account of dyspepsia he may likewise not remain long. The clerk who is able to withstand unsanitary conditions may in time be promoted to a responsible position, and then there may be more or less "worry and tire of the brain," and then a physician can more or less truthfully speak of nervous exhaustion or nervous prostration, or neurasthenia. And yet in many cases there is a better explanation, dust infection. I shall briefly mention the history of a young woman clerk who was with me for over five years, long enough to make a fairly full study of her case. Her history must be considered as "The short and simple annals of the poor."

This young woman had much ill health while in school. She had to begin work early. On account of her health her widowed mother thought it would be best to have an indoor occupation, so she would not be exposed to the cold and rain and snow. She

found a position in a large store, one that I know not only has poor ventilation but is not kept clean, and that meant to inhale dusty air all day long. In school she had frequent colds and now she had not only colds but also catarrh, but not sufficient to compel her to give up work. She soon came to the conclusion that everybody had catarrh, because all the people about her had it. In time the alimentary tract became deranged; she complained of dyspepsia. After several years she was promoted and that meant greater responsibility and now symptoms of so-called nervous prostration appeared, including worry and sleeplessness at night. About this time she came to me, after having consulted a number of physicians. She had had various diagnoses, depending on how she was complaining at the time or what symptoms were emphasized. On investigating I promptly came to the conclusion she was a dust victim and was reacting to an unsanitary environment, that instead of having had "all sorts of diseases" or at times several at once, she had a "protean disease," namely Coniosis or Dust Infection. I pointed out that the only cure was a change of occupation, to live under better air conditions. As she had to assist in supporting younger children, she did not see how she could change.

There were a number of factors contributing to her ill health. Being more or less sleepless during the night, she would fall asleep toward morning and lie in bed as long as possible, eat a hurried breakfast and take a car down town, carrying a lunch with her. The only water at the store was muddy, hydrant water which she did not use. As a consequence of a lack of fluid, there was constipation. In the evening she would be so tired that instead of walking home and getting the outdoor air, she took a crowded car. Moreover on account of her chronic ill health she was stunted, sallow, and had an old look. And yet she expected to be cured by medicine alone.

She was what physicians call an "easy mark;" she could be loaded down with different kinds of medicine with a charge for each. But she was unwilling to follow advice—except that of swallowing medicine. What is to be expected under such circumstances? I finally got her to get up earlier in the morning and eat more slowly and walk down town; likewise to walk home in the evening. But on the return of shorter days she had to abandon these walks because the streets were poorly lighted, at times no lights at all. The use of more fluid also helped.

She had little to say about the use of patent medicines, indirectly denied their use, but several years later, when I also prescribed for her mother, I found she had been using all kinds and that at times she used some containing alcohol, occasionally to such an extent that she was under its influence. There is an old saying about people drowning their sorrows in alcohol. That is practically what some patent medicine users do.

As already mentioned, the store was poorly ventilated. In fact, one might say there was no ventilation, and the constant stream of shoppers brought in a large amount of sidewalk filth. Conditions were about as bad as they could be. She suffered and complained greatly, and yet on the return of the open door season with free ventilation she would improve and then would stop "doctoring." On the return of cold weather there would be a return of symptoms and she would come back to me. Finally after five years she came to realize that her ill health was due to her environment, and yet she did not change positions or occupation. She did not even complain to her employer about the bad air conditions, knowing that if she did she likely would be discharged. This naturally led to a discussion of the value of Unions and of a combined effort and of the need for a community as a whole to clean up, that the individual is powerless. The only salvation of the individual under such conditions is to get away. Often the matter of ill health and chronic ill health is a problem for the community rather than for the individual; the physician would have to prescribe for the sick community, especially where our Triad of National Diseases prevails.

Cases of this kind are common and when the physician sees the uselessness of attempting to cure he may in time become dis-

gusted. If he gives any attention at all it will be only routine attention, and individuals who get "only routine attention" in time become bitter toward the medical profession. Naturally on account of such prescribing some physicians in time degenerate into mere symptom-prescribers and pill-peddlers. They give the people what they want, not what they really need.

This patient remained with me for five years when she finally drifted out of my hands. I had given her a good deal of time, wholly out of proportion to her small fee, a fee that in her own estimation took her out of the charity class, although to me still a charity case. But I got data. That was my real reward. Perhaps needless to say the longer an individual is kept under observation the more valuable notes become. But in the end there is, there must be, a termination of relationship. Why she ceased to report I do not know. I am inclined to believe it was on account of her mother's exposure of the fact that she used patent medicine.

Although I had long felt like severing the relationship of physician and patient, because I was accomplishing so little and the data I got were few and simple and mainly repetitions, yet I continued her in the hope that she would make a change and that I could then see how her health would improve, in other words, that instead of getting a lot of notes on "bad air influences" I would get notes on "good air influences." One year she said she was considering the matter of marrying, but hesitated on account of her health. I expressed my belief that if she got away from the store and lived under good air conditions her health would greatly improve. She did not marry however.

How will such an individual end? In general one can divide dust victims into two groups, those with a low blood pressure and with more or less deficiency of gastric secretions, and likely to end in tuberculosis. At the other extreme are those with a tendency to high blood pressure and over nutrition; individuals of this kind usually end with "heart or kidney disease." I shall refer to this subject later.

The patient at one time said if I believed that spitting, dirty streets and the neglect of cleaning up generally had such an evil influence on health it was my duty to call attention to these things in the newspapers. Now I had been doing that very thing, until quite recently. Shortly after I came here I wrote a brief paper advocating an anti-spitting ordinance. This paper was published in the Bulletin of the Indiana State Board of Health for August 1901. I got a lot of reprints in pamphlet form which I distributed, at my own expense. Then I advocated it in the newspapers. Did I get any thanks? No, only abuse. Subsequently I wrote many papers, signed and unsigned, regarding the improvement of municipal conditions, advocating pure air, pure water, clean streets, sewers, abatement of the smoke nuisance, noises, etc., but after a time one gets tired. Any one who objects, especially to unsanitary conditions, is regarded as a kicker, and yet what many communities need is vigorous kickers. There is always some antagonism created, especially among people who own considerable property and who are opposed to municipal improvements on account of expense. Many people are lot and land poor, they object to a doctor who advocates improvements. The doctor who says nothing and does nothing but strictly attend to his own business gets along best in life. Some may even question why a physician should write a book of this kind, which is largely a criticism of unsanitary municipal conditions.

One of my manuscript critics when she realized how much ill health this town has, how many physicians there are and how many drug stores with shelves loaded with patent medicines, and with newspapers full of patent medicine advertisements, remarked that the town must be full of ignorant doctors otherwise they would cure the ills of the people. I might offset this by the remark of another who said the town must be full of ignorant people or they would not tolerate such conditions. One can get all sorts of opinions. One of my friends told me he had passed through the town and stepped off the car to stretch his legs at the railway station near the heart of the city where the streets are paved and where

the railroad company keeps things neat and clean. (One street terminates at the station and has comparatively little traffic.) He thought the town must be a "nice and clean one." Another friend had also passed through but at another railroad station. He noticed the dingy little station, with streets around it deep in mud. His opinion was that it is a nasty and dirty town. A town may have only one or two paved streets and if a visitor comes to town he is sure to be taken over these streets. The only way to get a proper idea of a community is to spend some time in it and go all over it.

Since these notes were written, a "Doctor of Dead Towns" has been here. He virtually prescribed for a sick community. He was brought here by a local organization that wants to bring about an improvement. He found much to criticise. His "tonic" produced some results. Although this town for years has had good cement sidewalks, it was not until the late summer of 1910 that any serious effort was made to get properly paved streets. The people have at last awakened to their necessity.

European tourists who travel on through trains and stop only in large cities get a very imperfect idea of our smaller cities and towns. But they learn much of the condition of small villages as they pass through them, how unkempt they are in comparison to European villages.

I referred to the above patient as an "easy mark;" such people do not take much time of a man who readily hands out a bottle of medicine or a box of pills or tablets. They are ready to give the man who promises to cure a trial. Some men claim to be specialists for chronic cases, they may be perfectly willing to leave the acute specific diseases, with a few exceptions, to the regular profession, to the family physician. Such men catch the chronics and are able to extract fees to an extent unknown to the conscientious physician.

As I write I have before me a local paper containing a quarter page advertisement of an advertising doctor. He tells of his wonderful accomplishments in curing sick people. He is willing that the local physicians should treat cases of nearly all specific diseases, for he says:

"If you have the Measles, Typhoid Fever, Pneumonia, Smallpox, Scarlet Fever or any other acute disease of that type, do not consult Dr. ——. These are the diseases for your family doctor to treat; he gives that class of diseases his full time and attention, and naturally is better prepared to treat them.

But, on the other hand, if you suffer from some Deep Seated, Complicated Chronic Disease of the Stomach, Bowels, Rectum, Kidneys, Bladder or other organs of the Genito Urinary Tract—THEN consult Doctor—. As the family physician spends all of his time in the treatment of the Acute Diseases, so does Doctor—— spend all of his time in the treatment of the Special and Chronic Diseases which come under his specialty. That is why that any man or woman who will only stop and give the matter a little honest thought will at once fully decide that Doctor—— can give them MUCH BETTER and MORE EXPERT treatment in the disease which he treats."

It is interesting to question people who have been to such men. As just mentioned they know how to extract the money from the pocket book, but as to curing chronic ill health dependent on unsanitary conditions, of the kind described in this volume, which covers nine-tenths, or certainly three-fourths, of all cases, why that is out of question. No reputable physician makes promises to cure (simply promising to do his best) but some people want promises and they go to the man who does promise. What such people need is education, to know something about their bodies and how they react under abnormal surroundings. Their ill health is preventable by cleaning up generally, not by drugs nor by the "wonderful new methods" of the "Fly-by-Night" who comes to town; "Here to stay." A good physician does not need to advertise in such a manner; his "cured" or benefited patients will advertise him. The alliance of medicine men and newspapers is a bad one.

The young woman under discussion was a user of patent medicines. Whether she used them while with me was difficult to determine. As a rule I do not accept nor retain patients who are not truthful, as far as such matters can be ascertained. I have

had patients who told me that while taking "doctor's medicine" they also took "patent medicine," unknown to the doctor, some of whom never inquire about such matters.

Although there is much denunciation of the nostrum evil few physicians explain to their patients the why and the wherefore. When we critically examine into the matter we find that in a general way patent medicines fall into three great groups, the indifferent, the anodyne or sedative, and the cathartic. Although none can cure all may give relief. We all know that a cathartic may help. A "harmless" patent medicine may even at times give relief, as when an individual has been overdrugged, either by physicians or from the use of powerful patent medicines, by taking one that gives nature a chance to assert herself, especially if taken on the approach of the open door season. As a matter of fact many of the patent medicines are "perfectly harmless." But a medicine that is "harmless" is also powerless. A potent remedy on the other hand improperly used is apt to harm.

Alcohol may be used to deaden sensibility to pain and to drown sorrow; opium may be used for the same purpose and is more effectual to "kill" pains and aches. These are old drugs that enter largely into the composition of nostrums. More recently coal tar preparations have come into use; they also numb sensibility and are cheaper. All are of the habit-forming kind, requiring larger and larger doses, or the dose must be repeated more and more frequently. The alcohol user is apt to end as a drunkard, the user of opium becomes an opium or morphine fiend. "Dope fiends" are becoming more and more common through the use of cheap coal tar preparations. Many patent medicines readily induce habits, people resort to them constantly and in increasing doses; in the end they only aggravate their ills.

Alcohol, opium, acetanilid and other drugs of a similar nature can palliate symptoms, make the user feel better for a time, but properly speaking they can not cure. The conscientious physician is less and less inclined to promise a cure, only to do the best he can. The patent medicine men on the other hand "guarantee" their nostrums and promise cures without even seeing the individual.

A nostrum that has no influence whatever if taken on the approach of spring may be credited with producing a "cure" because people, and especially dust victims, naturally get better on the return of the open door season. Patent medicine advertisements in newspapers flourish during the closed door season; they practically disappear during the summer when infection on streets and sidewalks is sterilized by the hot sun and when there is free ventilation. The moment a community begins to clean up patent medicine advertisements begin to diminish in the newspapers. Newspapers that go into clean and sanitary homes contain few patent medicine advertisements.

How much explanation is needed to convince a man that cleaning up, change of occupation, or change of environment is the proper remedy for his ills? How much time should a physician devote to the individual who seems unteachable?

A middle-aged man came to me; he had heard of some people whom I had greatly benefited, "cured" he thought, but in reality I only benefited them because they lived up to good air advice. Women can do that better than men who must go down town to work. He "felt sure" I could help him, but when I got his history I doubted it.

He came to live in town years ago, direct from the farm. Evidently he was wholly unadapted to town life and coming in contact with sickly people. At first he complained mainly of a deranged alimentary tract and had all sorts of diagnoses, then nervous symptoms became more marked and the term "nervous dyspepsia" was perhaps the best one that could be applied. More recently he was told he was neurasthenic, with of course all sorts

¹ The Pure Food and Drug Act, has actually been of great advantage to many patent medicine makers, in that they are able to add to the label, "Guaranteed under the Pure Food and Drug Act." People ordinarily do not understand that that merely means the absence of certain ingredients, especially the ones just mentioned, or stating their amount.

of synonyms, including "nothing the matter," a diagnosis which he hotly denied.

For years he had been taking patent medicine. Why not? He had obtained little help from the doctors and so came to the conclusion that it was all experiment and guesswork and he might do that himself and at less expense. He took "all the patent medicines you ever heard of."

I gave him a lot of time, both in ruling out definite disease and in advising him how to reduce symptoms to a minimum. He was a dust victim, wholly out of harmony with his surroundings, but I could not induce him to make a change. When I saw that he expected at least some medicine I gave him a little, such as was really indicated at times, as laxatives and headache tablets. time I found he placed less faith in my advice than in the medicine and wanted medicine to take regularly, and then I began to lose interest. Just then however he became distributor of samples of all kinds, including patent medicines, and that gave an opportunity to try all sorts of nostrums, "free, gratis, for nothing." I now encouraged him to continue to report; I got all sorts of data regarding patent medicines. I no longer disputed with him but allowed him to believe we both were experimenting to find the "right medicine." When I finally got tired he had not yet found the right one.

To make the story complete it should be added that the man was so poor that he could not buy the kind of food needed, could not take necessary rest nor buy sufficient fuel that would keep the house warm without stopping up all cracks and crevices.

While revising these notes a patent medicine circular was left at the door, entitled "Short Stories," stories alternating with testimonials. On page 9 occurs on item as follows:

FUNNY ADVICE BY FUNNY DOCTORS.

It is absurd to direct "good nourishing diet, rest, fresh air," etc., to a poor man or woman who has hardly enough to keep body and soul together. But this is thoughtlessly done every day. M. Brieux, the well-known author of Les Avaries, the play in which the ravages of syphilis are

openly presented, discusses this subject in Le Matin. The following regime was prescribed for a patient who applied for treatment:

1. Avoid fatigue, damp and cold. 2. Clothe very warmly; wear flannel next to skin. 3. Eat well; underdone meat, 7 to 15 ounces a day, to be taken scraped and pounded in cold buillon, or as balls in powdered sugar. Raw or soft boiled eggs—four to six, if possible eight to ten a day. Sardines in oil, two daily, butter, watercress, cooked and raw. A large cup of cocoa with milk in the morning. Beer with the meals.

And to whom was this regime given? To a beggar peddler, covered with filthy rags, who earned a few sous a day.—Selected.

If one were to comment on that one could say. Some doctors are more than funny, they are foolish. They give advice utterly impossible for poor people to follow. On the other hand, is it good for poor people who can not afford the necessaries of life to resort to patent medicine? To what extent will that benefit them? The remedy is for the charity organization to seek out the poor and give them adequate assistance. The man who is in danger of starvation is not a case for a little medicine, nor does giving a little food suffice; he requires a sufficiency. It would really be better for some people to die outright than to die a lingering death of weeks and months from starvation, attended by all sorts of misery. The same is true in regard to the use of nostrums. If people knew the hopelessness of taking nostrums and medicine they might make some determined effort to get better. As it is the patent medicine man allows them to live on in hope—and finally die in despair.

When I first began the practice of medicine I did not inquire what patients had been taking or who had been the previous physician; I wanted to make my own diagnoses and prescribe according to my own ideas. In the course of time I found that most applicants had ill health, it is really the exceptional individual who has a well-defined specific disease, and then I discovered that it pays to find out what people have been taking and who has been prescribing for them, for manifestly if an individual had had symptoms indicative of malaria and had been dosed with quinine it would be useless to give more quinine; or if a patient had been

told there was sluggishness of the liver and had been severely purged a different mode of treatment might produce better results. Then too it pays to ask who the previous physicians were. One can judge people by their physician, as one can judge them by their clothes. The patient who has been drifting about among cheap symptom-prescribers really never gets the best that Medicine has to offer and the diagnoses of such men may not be worth considering or repeating.

It also pays to ask whether an applicant, or new patient, has been using patent medicine. It gives one an idea of his mental status. The man or women who has had a high school course in anatomy and physiology, in hygiene and sanitation, is not apt to be a purchaser of patent medicine and does not constantly require a-b-c explanations—why certain kinds of ill health are prevalent, why ill health must be considered a reaction largely due to an unsanitary environment and incurable by drugs or by outlandish modes of treatment.

Poor and ignorant people and patent medicine go together. That means especially poor people living under unsanitary surroundings; those living in isolation are usually healthy and have little need for medicine. Intelligent people likely have a good family physician who by timely advice prevents ill health and The man who has his nose on the grindstone and must work as long as possible is to be pitied. He may be willing enough to follow advice but is wholly unable to do so; he wants a doctor who is going to cure him by the use of medicine. He is not apt to have as his physician a man who gives detailed advice. There are people moreover who place patent medicines and the doctor's medicine on the same plane. They seem to think it is merely a question of getting the "right medicine" and that if they keep on trying they will find it. But at times even intelligent people, or what must be regarded as such, use patent medicines, due mainly to the way nostrums are brought before the public, how they are advertised, or recommended by those who believe they have been benefited.

Some people avoid patent medicines that are boldly advertised as such but they may be "taken in" by the "reading notice." Newspapers differ greatly in how they sell their advertising space. Some are very careful regarding the character of the advertisements they admit. Properly considered, "newspaper medicine" as commonly understood is an anomaly. Why should the newspapers, many of them, be in league with nostrum makers and quacks of all kinds to defraud the public in offering impossible cures, offering to cure what no reputable physician can cure or under conditions that make a cure impossible? Many physicians require their patients to go to bed; the nostrum maker may offer or even "guarantee" to cure while a man is at work, a potent reason to the poor man who must work as long as possible. Many affections, or conditions of ill health, are wholly incurable in the presence of the cause, the reaction will only cease when the cause is absent. The Hay-fever victim has learned that neither patent medicines nor doctors can cure. If he wants relief he must "change climate." A man going to a new home may find it so malarial that he has difficulty to live; if he is wise he will get out. Our own State in former years had a reputation that attracted very few immigrants; they passed on further west. A man moving to a new city may or may not know that he is running the risk of contracting typhoid fever on account of bad water supplies; he may decide to leave or at least take the precaution to sterilize the water. People who are prudent are apt to avoid such cities en-If people realized to what extent ill health is dependent on bad air conditions they would shun many dirty cities.

The number of patent medicine advertisements in a city's newspapers gives some general idea regarding the presence or absence of sanitation. People in health ordinarily pay no attention to such advertisements, just as others fail to see the market reports or read base ball news. Newspapers are written for all sorts of people, everybody is likely to find something to interest him. If there is too much that is disagreeable a man will likely not subscribe at all. Some newspapers claim to be "The best family

paper." They usually are the ones that contain a minimum of patent medicine advertisements; they may refuse to insert advertisements disguised as reading notices or use headings that mislead. When a community is oversupplied with newspapers there is apt to be keen competition. Some of the papers are continually on the verge of bankruptcy, they are apt to accept all sorts of questionable advertisements. We see a somewhat similar condition of affairs in the case of doctors; the community that is oversupplied likely contains men who make all sorts of promises to cure in order to get patients.

A clergyman who might be regarded as a neurastheniac came to me. He noticed some mild symptoms that led him to think of consulting a physician, when, at the psychological moment, his eye met a "reading notice," a disguised advertisement of a patent medicine that can be "mixed at home." At the bottom occurred the statement. "The editor can endorse this prescription." The prescription itself contained several well-known ingredients and then the "joker," the name of the nostrum. The preacher promptly sent around to the druggist and had this "prescription" filled. Unfortunately druggists will fill prescriptions without the physician's signature; formerly the druggist was the righthand and co-worker of the physician; today he is mainly the agent of the patent medicine men. He will even wrap the doctor's medicine in a patent medicine circular. This preacher took the medicine for some time but instead of getting better he got worse and then he came to me. When I got his history and saw what he had been taking (he showed me the bottle) I smiled and explained how he had been taken in. He became very indignant that people are fooled by advertisements gotten up like reading matter and that an editor should endorse a nostrum. He asked, Is there no way to stop it?

With a man of this kind one is apt to discuss things in detail. I pointed out to him that in proportion as people became educated and learned something about physiology and pathology and sanitation they know better, that in proportion as communities clean up there is no need for nostrums that can not cure although they may palliate or disguise symptoms.

All my patient needed was good air. In a clean community likely he would have no symptoms whatever.

In a dusty city one is apt to find all sorts of advertisements of cough cures, but is a "cough cure" really a remedy? Ought there not really be a cleaning up and a doing away with the cause of cough, especially of irritating dust? The same is true for catarrh; people who have good air have no catarrh. It is also true of a host of symptoms, many of which are designated as "diseases" by the patent medicine men. Some patent medicine men may give warnings not to use strong medicine, but to use their mild medicine regularly, "every day." One may question whether that is good advice. Many of the patent medicines are of the habit-forming kind, the victim finds it almost impossible to stop them.

The above mentioned patient came to me after his first experience with patent medicine. Some people come to a doctor without having taken any patent medicine at all, but most of the old chronics come after having tried many if not "all they ever heard of." Now suppose I had not spent a lot of time in making explanations, that he had no disease but was only reacting to an unsanitary environment, is it not reasonable to conclude that he would have made continued efforts to "get cured?"

I have had many patients tell me that at first they were opposed to taking patent medicines, but when they found the doctors unable to cure or even give marked relief they "experimented" in the hope that they would find something that would help. They thought it all guess work. The old explanation that "people love mystery" did not appeal to them—to them doctor's medicine or his Latin prescriptions were just as "mysterious" as the patent medicines. It pays to tell such patients why they are still uncured and why they are incurable by the use of medicines of any kind and from any source. Whether a bottle of a doctor's "favorite prescription" is handed out directly, or his prescription

filled by a druggist, or whether a bottle is bought ready-made is to many immaterial.

On the other hand I have had patients, exceptional ones to be sure, who came for advice and not for medicine. If the matter is not clearly explained to them (why they have ill health dependent on their environment) one feels sure that in time they might also try patent medicines. Why not? Advertisements confront them on all sides. People who have been "cured," who assert such at least, tell them of this and of that nostrum. When people get desperate they will try anything to get relief.

Some nostrum makers publish testimonials from "home people," or "from people you know." Several years ago I cut out a number of these published by a certain firm. With one or two exceptions the people lived on back streets of neglected parts of the city. I myself did not know a single one of the testifiers. I took these testimonials to the medical society and asked the physicians if they knew the people. A few of the individuals mentioned were unknown to any of the physicians; some were known to all, they had had experience with them. With two or three exceptions all were known as deadbeats. Physicians considered them people not worth while. There are various reasons why this is so, as there are various reasons why such people will sign a patent medicine testimonial.

A man complaining all winter may of course be benefited by taking some nostrum at the proper time, especially on the return of the open door season (seasonal influence). Some patent medicines are really based on prescriptions of physicians; if taken at the right time and under the right conditions they will benefit, but that does not mean cure. The reason the doctor's medicine even of a simple kind is usually efficacious is due to the fact that it is given after more or less study of the patient. There are very few medicines that are really curative, we need only think of quinine and real malaria. There are any number of ailments that doctors can not cure and that patent medicines can not cure. Nature does the curing, medicine can only help, it may turn the balance in our

favor. Many states of ill health are wholly dependent on environment. The man who works in a dusty factory may cough incessantly. He may have severe asthma. Unless he changes his occupation no medicine will cure him. The experienced hay-fever victim is apt to smile when promised a cure, even by a doctor. The patent medicine people have practically abandoned advertising cures for hay-fever; too few people "bite" to make it worth while.

Recently some nostrum makers have substituted the term "relief" for "cure." This change is due to the operation of the Pure Food and Drug Act. At times one sees advertisements in which occur one or more testimonials from people who claim to have been cured, while the heading of the advertisement may claim relief only. Likely in time the testifier will discover that it was only temporary relief, for probably with the return of the closed door season he will again relapse, particularly if he is a dust victim.

Drugs and medicines and cures of all kinds are innumerable. The shelves of the average drug store groan with them, and yet the physician uses very few medicines, the true and the tried. With Socrates, on passing through the toy shop, he can say, "How many things are here which I do not need."

While writing these notes two incidents occurred which may be worth recording.

At a meeting of a medical society a young physician had a "cold;" he asked one of the older and more widely experienced men,

"Doctor, when you have a cold what do you do for it?"

"I wear it off," was the gruff reply.

While at a drugstore the druggist, whom I know well, in a hoarse whisper asked, referring to his own condition, "What do you call it, aphonia?" I call it frog in the throat, I replied.

One of the two men in the store at the time inquired, "Do you have any cure for a cold?" The druggist immediately answered, "Yes, some good ones." The men were of a kind to appreciate a joke on the druggist and so I loudly called back, "Do you have any real good cold cures?" Of course he had to reply

in the affirmative. Then I shouted back, "Why don't you try some of them yourself?"

The druggist did not enjoy the joke. His cold cures were to sell, not to try on himself.

For years I have been taking five daily newspapers, two from our capital city and three local ones, not to speak of Sunday papers. The reason for taking so many is to study the patent medicine and quack advertisements. To what extent do different papers admit them to their columns and where do they draw the line? Some apparently admit everything, others draw certain lines. One paper may admit all sorts of patent medicine advertisements but refuse the advertisements of the quack. One wonders to what extent a newspaper looks after the people's, the reader's, interest, and to what extent it is purely selfish, acting upon the principle, Let the buyer beware. Many of the monthlies and weeklies are careful of the sort of advertisements they admit to their pages, even newspapers are beginning to draw lines. But so far newspapers that do not admit patent medicine advertisements are exceptional.

Now in this volume I am attempting to show that many ills, complaints and symptoms for which patent medicines are used are incurable by drugs, because they are reactions. The only cure is to get away from the cause. But medicines may palliate; some blunt sensibility and give relief from pain, but that does not mean cure. If the people clearly understood this they would not constantly be trying old patent medicines and all the new ones that appear. But who is to teach them?

What occurs when the average individual in ill health goes to the average doctor? We all know what takes place: often while the patient is telling his complaints the doctor is putting up some medicine which he hands out with directions how to take, with scarcely a word of good advice. Is it not true that the average patient expects to be cured by the medicine, just as the user of patent medicine expects to be cured? If one fails, he tries another. Medicine is medicine. Many will ask, What is the difference between medicine sold over the druggist's counter and that handed out by the doctor? Some doctors are merely competitors of the druggist in selling medicine, in peddling pills.

Suppose a young doctor with high ideals comes to a community where the people use doctor's medicines and patent medicines indiscriminately, where they try one or the other, perhaps both at the same time. How will he attempt to tell the people that their ills are not curable by medicine? that he does not propose to give drugs for ills that are incurable! If people understand that the new doctor, a regular graduate, is not going to give them drugs, will they call on him at all? If he would speak out he would literally be committing professional suicide. He would not get a footing. He would not make a living. In order to teach the people he must still give them what they want and gradually teach them better. But the young doctor soon marries and then has a family to support and that means he is less and less inclined to give the people what they need, merely giving what they want, and soon his practice does not differ from that of those about him. He gives out medicine as freely as the rest-and then is it any wonder that the people place him and his medicine on a level with that of the patent medicine men? The doctor who does not do as others is exceptional.

A newspaper has a duel function, it supplies its readers with news and supplies the needs or wants of the buyer and seller. The man who has something to sell uses the newspapers as the gobetween. The man who wants something will make his wants known through advertisements. The patent medicine man has something to sell; why should he not advertise his wares?

The doctor has something to sell, call it medicine or call it skill or professional services, but instead of using the newspaper he hangs out a sign. The doctor's sign often means "Medicine for sale." (That applies in nine cases out of ten; the tenth man may be wholly exceptional.) Because there are practitioners who do not sell medicine or write prescriptions other doctors are "down on them," just as they are down on the newspaper that advertises

patent medicine and that takes the advertiser's part. This state of affairs will likely continue until the people themselves make a change.

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ADDENDUM: On p. 209 I asked, Who makes the best family physician? Old patients are constantly giving me their opinion. A friend in a distant town on reading this manuscript told me of a young man, the son of a doctor, who went through a very unsanitary high school with flying colors. He was undecided what to do and for a year had an outdoor job and then concluded to go to medical college. He did not lose a day on account of ill health. although the medical college was located in the heart of a large and dirty city. Shortly before graduating while home on a short vacation he told of the kind of work he was going to do after getting his medical degree. He was going to treat "sick people," with strong emphasis on sick; he did not want "old ladies" nor "old chronics" who are constantly complaining, "who think they are sick." He thought that kind of people needed faith and mind cures, they did not need a regular physician. "Thus spoke inexperienced youth."

Here again my comment is: How unfortunate that medical colleges do not teach about common ills and the influence of environment. How can a young doctor in robust health, who has had no instruction, and no practical experience, understand the kind of cases that he meets on getting out into the world? If such a young doctor meets an old chronic who takes an interest in him he may be told a few things about chronic ills. Even the old "granny" may give him a few ideas that she has learned through bitter experience. Having learned more or less about the sciences on which Medicine rests, he of course will learn much more quickly than people who have not such a foundation. As already mentioned, such a young physician may have very high ideals but in time, unless he has some guiding principle for treating ill health, he degenerates into a mere routinist or symptom-prescriber like those all about him.

In affections and states of ill health due to bad air the proper remedy is to clean up, to get away from dirt. If a community will not clean up, the individual had best go to one that does. The florist knows what will happen to his plants when he fails to keep them clean and from being overcrowded; a sudden blight will carry them off. The farmer knows that his domestic animals when closely housed become sickly and die. Among human beings living under unsanitary surroundings there may be much ill health, many symptoms, but it is well defined disease that kills. Many symptoms can be palliated. A cough may be "cured by a cough cure;" there are all sorts of remedies to "kill a pain," but the cause of the cough and of the pain may be operative just as before. The absence of symptoms merely gives the individual a false sense of security. If he knew what the cough or the pain signified he would not resort to such treatment. Many drugs blunt the nervous system; they numb pains and aches. We know how a man who suffers bodily and mentally will drink to excess, drown his pain and sorrow in alcohol, and how others will take opium, perhaps in the form of hypodermic injections. There are a number of drugs that can be used for this purpose; if one is not used, another will be. Alcohol, opium, cocaine and acetanilid can largely replace one another. If those in misery are denied the use of one, they are apt to resort to another. I have repeatedly met people who had been benefited, who felt better, by the use of certain nostrums (particularly of the kind that blunt sensibilities) but discontinued their use for fear of forming "the habit." The number of patent medicines that are used habitually is remarkable.

The subject of the relationship of patent medicines to the absence of cleanliness is a large one; likewise that of the influence of the mind on ill health and disease, as manifested by the various faith and mind cures. When we study reputed cures we find that many are intimately bound up with a change of seasons and change of surroundings.

Many persons unqualifiedly praise or condemn certain things. Physicians almost invariably condemn the patent medicine men and modes of treatment which they do not or perhaps can not countenance. People often want to know the reason why.

When we begin to inquire why patent medicines and fads of all kinds that aim to cure ills are so common in our country we may find it due to the way in which people live and are exposed to ill health producing conditions. One of these factors I have attempted to point out in this book. I feel confident that if people cleaned up generally, had clean towns, clean streets and clean homes (and that means also clean food, clean water and clean air, clean clothing), there would be vastly less ill health and disease than there is at present. Some one has truly said that chronic ills are mostly of our own making, and that means they are largely preventable.

Sanitarians have observed that as soon as a city gets a pure water supply salubrity greatly improves; there is less disease and ill health that primarily is not dependent on the use of bad water. One might say people live up to their good water supply; that they are less tolerant of dirt elsewhere. It is difficult to teach the value of good clean air to those who drink dirty water and live on dirty and dusty streets; one almost comes to the conclusion that the first step in getting clean air is to get clean water.

I recall years ago reading of a city man, a clerk, who received as a Christmas present from an aunt a fine marble statue. He had expected something more useful. When the statue was put on the center table, the table seemed out of harmony; a fine new center table had to be bought to do it justice. Then it was noticed that the table was out of harmony with the other furniture in the parlor and that meant to get new furniture. Then they noticed that the carpet and wall paper were out of harmony. The refurnished parlor was in such marked contrast with the other rooms that in time the house was completely refurnished, even to the kitchen. Then the inside of the house was in such marked contrast to the outside that more improvements were demanded. The improvements extended to the lawn and to the street and alley. Then the neighbors noticed how their own homes were out of harmony

and they began to improve. The marble statue became the means of renovating a whole neighborhood.

Clubs of all kinds flourish today. How many are devoted to a study of the legends of early days? How many devote themselves to the heathen in foreign lands? How many study their own community, its wants and needs?

In this country the majority rules. We can have protection or free trade, prohibition or license. Men, and women too, warmly take sides. But what sort of citizen is apt to take the side of dirt and dust and ill health and misery? Club women can do much, the women generally can do much, for in what does keeping a city clean differ from keeping a house clean?

One of my old patients who has had much experience with court house conditions in looking over this manuscript expressed her dissatisfaction that I did not have more to say about court house air and city hall air and the dust factor in politics—how men who do not smoke and chew and spit take little interest in politics and how the women are disgusted with politics and demand a hand in electing officials. Now this is a subject on which I have collected a lot of data but it would take time to go over all. Likely the argument would run along this line, I am not necessarily speaking of local conditions.

"Slates" are usually discussed and made up in places where air conditions are very bad, only too often in saloons. Individuals designated as "best citizens" usually do not take part. At the primaries air conditions are usually bad and the "best citizen" too often remains away, especially if he is influenced by bad air. In his absence ward politicians control matters and nominate candidates, "slates go through." Only too often candidates are politicians who can live under bad air conditions, often bull-necked apoplectic individuals (who however usually die prematurely on account of some cardio-vascular affection) or, on the other hand, men who do not react to bad air but who are as clay in the hands of the bosses. Now in the early days political meetings proper were held in the open but today "stump speeches" are made in-

doors and usually under very bad air conditions, so bad that "best citizens" stay away. If the women attended likely there would be less tobacco chewing and smoking. The typical politician as we know him is not concerned with the welfare of the city and to distract attention from local problems he injects State and National politics into city affairs and befogs local issues. When the best citizen comes to vote he finds very little difference between the candidates of the two great political parties; he does not care whether he votes or not. But there are men who do vote, some are paid for doing so. "Writing to the newspapers" after the election does no good.

Remarks about city politics and politicians also apply to county, State and Nation. Is it not true that only too often the man who is elected is of the kind who always has a cigar in the mouth and puts his feet on the table? What is to be expected from him in the matter of cleanliness? Is it any wonder that the women are disgusted and demand the right to vote and that many States are giving them this right? In other States men are beginning to vote for candidates other than those of the two great political parties; just now socialist candidates are receiving many votes. Socialism in its best sense seeks the common good. If the socialists live up to their ideals their party has a great future before it, especially in the management of our cities.

Socialism does not mean anarchy. The typical anarchist as described in the newspapers resembles the hero of the blood and thunder stories. Anarchists usually meet in the back room of some saloon under horribly bad air conditions. They react and the reaction manifests itself mentally, sometimes reaching the point of insanity. The best remedy for anarchism is cleanliness, a fact which socialists seem to recognize.

(Writing as I have does not necessarily mean that I am a socialist; as a matter of fact I am largely a believer in individualism. But when it comes to the matter of cleaning up, in making cities sanitary, I believe the individual is helpless; it takes a combined effort. Theoretically we believe that all men are born free and equal, but practically speaking no one believes it. It is impossible for all to live on the same plane. As an evolutionist I believe that many individuals are out of harmony with their environment and with the spirit of the times. As a physician I believe that the man who does not give attention to symptoms of ill health is not of a type to survive under complex life conditions.)

The other day one of my old patients hailed me on the street, "Did Mr. X come to you?" naming a court-house official. No, he did not. "Well, I recommended you to him and he said he would come. He has been complaining of a sore throat and catarrh for some time, and has been doctoring. I told him not to waste any time but come to you. You may look for him at any time." He made a few remarks on what a nice sort of man Mr. X is, and indicated that I should do my best, which I promised to do—but I did not thank him for referring the man to me.

Now although my old patient knows more or less about dust influences I do not know whether he suspected that official to be a dust victim. Assuming that he is, in what does "doing my best" consist? Should I tell him that he is not adapted to the air of the court-house, that he is a farmer and not a politician and that he ought to live on the farm? Is he "sick enough" to follow good air advice or will he deem me a crank and try some other doctor who will give him lots of medicine? Judging the man in the light of other cases, I do not want him as a patient. I have no time for making long a-b-c explanations, and unless one does explain so a man understands he will not follow good advice. But unless I do have a "talk" with him how will I be able to get the facts in the case? He may not be a dust victim at all—and in that case I likely would not mention him among cases. If he comes to me after "my book" is out I can give him a copy and save a lot of time.

Is it necessary to add that "nice men" are put on all tickets—to offset the men who are anything but nice—no political boss would think of making up a ticket wholly of his own kind.

The honest farmer or citizen who is elected to office and must

spend his time under bad air conditions is to be pitied. If there were a determined effort to have good air at the courthouse, say by electing a woman or two who would not tolerate the smoker and chewer and spitter, perhaps there would soon be a radical difference.

CASE REPORT: Mrs. — called up at a time when my name no longer appeared in the telephone directory as a physician, asking if I still accepted new patients. She had been referred by one of my old patients, and the very fact that she had been referred was to me good evidence that, in all probability, she was a dust victim. Her language indicated that she was above the average in intelligence. She lived in a good section of town. Being childless and in fairly good circumstances meant that she likely would be able to live up to good air advice. I asked her to come in and we would talk over matters.

The woman gave a long history of "not feeling well." Said she was not really sick but at the same time was not well, there was always something wrong, yet she was never bedfast but often housefast. She had tried many physicians and even specialists in a large city. She clearly realized the seasonal influence, that she got better in the summer and relapsed in the fall. She was inclined to self-pity, that she could not do as others. Moreover there was a history of tuberculosis in one side of her family and she had a constant fear of consumption.

She was fond of flower gardening and on the approach of cold weather took in a number of plants to winter over. This gave me a clew regarding explanations. I proposed a systematic examination and keeping a record, with health supervision, to which she agreed. The fact that I found nothing radically wrong of course was pleasing but when she asked, Then what is the matter? detailed explanations were necessary. I told her I believed she was a dust victim and that if she kept herself under observation and reported occasionally she could soon verify it, which she did in the course of time.

She wanted to know how to reduce acute attacks to a minimum, and if possible lay in a stock of health that would tide her over the late winter months when she invariably ran down, during the last few years at times reaching low ebb. The explanation of raising plants and taking them into the house on the approach of cold weather enabled her to understand. Unless one knows just what to do the plants will sicken, even die; one must learn how to take care of them. Similarly people must learn how to take care of children under unsanitary surroundings or they will perish. Likewise the individual must know what to do for himself—among other things avoiding five cent shows where air conditions are very bad or long shopping tours, such as people make who have lots of time but who buy little, shopping being a sort of recreation. She protested that these things did not affect her, but her diary soon convinced her that she "felt good" in proportion as she avoided crowds and bad air.

This patient was one of those individuals or cases that are a bugbear to the honest physician; he does not know what to do and is apt to try all sorts of remedies and modes of treatment. When such a patient has made the rounds of doctors and specialists she is likely to be hypercritical and to question. Unless the physician is willing to answer questions he may find the individual very disagreeable, and still more so if no good results follow his treatment.

Although I promptly diagnosed dust infection and regarded her as a dust victim, yet for some time I was doubtful to what type she belonged. I finally came to the conclusion she was one of those nervous individuals who ultimately develop membranous catarrh of the intestines. Practically all her symptoms must be regarded as warnings, rarely is any one sufficiently severe to demand an active remedy. There was more or less complaint of constipation and yet all she needed, besides good air, was several glasses of water a day. Occasionally after an acute exposure there was an acute neuralgic condition of one side of the face, for which she received a prescription. Although in the past she had

taken a lot of medicine and had come to lose faith in drugs, yet she was willing to take medicine, even wanted it.

She complained that physicians had not been frank with her, had not freely discussed her symptoms and apparently held back information from her and on this account she believed she was worse off than she really was. She feared tuberculosis. Then again she expressed her belief that doctors were constantly experimenting on her, trying new medicines. The most common diagnosis was malaria; I advised her to keep a record of her temperature twice a day; she was surprised to find that this frequently was subnormal and that the complaint of chilliness came on after there was an acute exposure to bad air. Because the diagnosis of malaria had been such a frequent one, she clung to this longest. If physicians regarded her complaints as "imaginary" they did not tell her so—that is a diagnosis most commonly made only in the case of poor people.

There was a complication, a serious one, that held her back—a catarrhal husband constantly exposed to bad air who brought infection to an otherwise clean home. It was equally important to advise and prescribe for him.

DISEASE, ILL HEALTH, SYMPTOMS. How shall one explain the condition of an individual who has ill health rather than well-defined disease, who reacts to his environment, and to what extent shall one speak of prevention, of avoiding the causes that produce symptoms? Explanations depend largely upon the individual. Sometimes the explanations run along the following lines:

When a man goes up a high mountain he reacts, there is oppressed breathing, he feels as if he would suffocate, he feels faint. Some speak of the reaction as mountain sickness. Shall we call it a disease—"mountain disease!"

When a man goes into a dense smoky air he reacts, he feels as if he would suffocate; he coughs and sneezes, his eyes water, mucus forms in the air passages—shall we say he has "smoke disease?"

When a man falls into the water he reacts, how greatly depends. He may get water into his mouth, he may be paralyzed from fear, he may be in great danger from drowning—shall we say he has a disease? Is the act of drowning a "disease?" Today some people seem to regard everything as a "disease."

What sort of aid would we give a man reacting to a rarified atmosphere, to one reacting to smoky air, to the one who falls into the water? To what extent do we consider a man in danger and make efforts to succor him? What sort of "symptoms" do we consider indicative of danger?

Perhaps the answer largely depends upon our own experiences. If we are able to swim we may expect the man who fell into the water to swim out or at least keep his head above water until help arrives—his vigorous kicking is not to be regarded as a symptom of drowning but as an effort to save his life. We are likely to watch him, throw him a life preserver, if not jump in to his aid, if help is needed. The man who can not swim would be foolish to attempt a rescue by jumping in and the man who throws a heavy life preserver and hits the swimmer on the head only does harm.

Is the man inhaling smoke in danger? What are danger signals, what are dangerous symptoms? To what extent is a rarified atmosphere dangerous? Would a physician treat such a case "symptomatically" or would he merely advise keeping quiet and as soon as possible transfer the individual to a lower altitude?

When a man is attacked by some wild beast he is apt to make a vigorous defense. Should we call the reaction a disease, and should we regard his efforts to save himself as symptoms indicative of danger, or do they show that the man is successfully fighting off the enemy? Is it not true that danger appears or increases as a man fights less vigorously, as he gets faint, exhausted, when the reaction, i. e. "symptoms," is less marked?

When a man is attacked by myriads of microbes his body reacts, there is an active fight. To what extent shall we aid the man

attacked? Do we know what he needs? Fever is an index of the heat of battle—are we aiding a man if we give him something to "reduce the fever?"

A long time ago a cynic defined a physician as a man who pours drugs about which he knows little into a body about which he knows less. But physicians in the course of time have learned a lot about the human body and about drugs, including their worthlessness to cure and their value in palliating symptoms as well as in discriminating between symptoms—those that threaten life and those that merely indicate that the body is reacting vigorously in "throwing off the disease," in getting rid of infection.

Many physicians use simple remedies and get results—they know just when to use them to turn the balance in our favor. When a physician is sick he does not prescribe for himself; he keeps in mind the old saying, A man who prescribes for himself has a fool for a patient. Lawyers have a similar saying. But in the case of symptoms not due to the presence of real disease he likely has discovered what will help him and he may not be above taking his own medicine. If the people knew how little medicine a physician takes and how little he gives his relatives and friends and his old patients they would carefully consider the indiscriminate use of drugs.

To what extent are drugs of value in dust infection? Such a question opens up a wide field for discussion. Here I will merely say drugs may help but can not be considered in the light of "cures."

Among my early patients was a servant girl with sore hands, the skin was scaly, cracked and occasionally suppurated. She had used all sorts of salves, ointments and lotions. I told her the most important thing to do was to keep her hands out of water. But how was she to do that; she had to work? Could I write her a prescription? I did write her one for a greasy mixture, explaining that it would be effective only if the hands were kept dry. I did not see her again for several years and then I learned that she continued to have sore hands for a long time because she had to

put them in water more or less. After getting married when she "could take it easy" she was able to live up to keep-your-hands-out-of-water advice and then her hands soon got well.

Another early patient was a man who worked with moist cement, he had sore hands that he vainly tried to heal by the use of medicines. I advised a change of occupation. I did not see him again for nearly ten years, when one day he greeted me on the street. At first I failed to recognize him, he was thin, sallow and hollow-eyed, with suffering written on his face. I learned that he had gone to a large city soon after he had consulted me, his hands improved at once—but gradually his chest began to ache and finally he came to the conclusion that the dusty city air did not agree with him; it choked him and made him cough. As a matter of fact ten years of city life had exhausted him. Is it necessary to say that the man in addition to advice to keep his hands away from irritants should also have had good air advice, to keep his nose out of bad air?

Frequently I have occasion to advise hay-fever victims, and if they get any prescription it is one that may palliate; the "cure" consists in change of air. Old hay-fever victims have fully learned this lesson, they smile at those seeking a "cure" by the use of drugs.

The man who wants to avoid the effects of rarified mountain air, of smoky air, will keep away—just as the dust victim will keep away from dusty air.

Should a Patient be Told the Truth? The patient had questioned whether she was being told the truth by physicians; that led to a lengthy discussion. I explained to her that in case I had found tuberculosis the question of telling the truth would have assumed a different aspect than where there is no well-defined disease; that had tuberculosis been present I likely would first have discussed the matter with her husband, but since she is only a dust victim I had at once discussed conditions or findings with her. There was no need at all for concealing the truth, she ought to know the truth. "The truth shall make you free."

But, a physician told me, by speaking of dust influences patients, especially the active minded, may imagine effects after an exposure, symptoms may be purely imaginary. The best reply I can make to such a remark is: Study your own cases, withhold the information that the patient is a dust victim as long as you desire, until satisfied that dust influences are real or "purely imaginary." I have satisfied myself over and over that they are real.

Such patients will naturally ask one's opinion of other physicians. Here is dangerous ground, for patients will "talk" and one may get an undesirable reputation among fellow-practitioners. Under such conditions the physician had best get the patient's view and avoid expressing his own. It certainly would not be proper in a volume of this kind to give any derogatory opinions against physicians who honestly try to help their patients and are working in the best light they have. But what shall be said of the doctor who has so little esprit de corps, so little pride in his profession, that he does not belong to his county medical society where things of common interest are discussed and where physicians learn to know each other and their abilities and capabilities? Is it the physician's duty to expose such men, men who readily promise to cure what no conscientious physician can cure? Here I end as I began, should a patient be told the truth?

EXPERIMENTING AND BEING EXPERIMENTED UPON. The patient's remarks of being experimented upon should also be considered. The subject is one that could be discussed at great length. One would have to go back to the early days when physicians had practically no knowledge of the workings of the human body, when they tried all sorts of things in the hope of "driving out" disease. Then we must consider the fact that in proportion as men have few facts they are apt to spin elaborate theories. Properly speaking there was no medical science until about three hundred years ago when with the revival of learning the experimental method in science arose. Up to that time the circulation of the blood was not even known. Today the experimental method has reached a

wonderful development. There are even journals devoted to "experimental medicine."

But medical men who experiment are comparatively few. They are usually college and hospital men. The average physician is not an experimenter, properly speaking, just the opposite. He even hesitates to try new remedies unless they are backed by authorities. But there are not lacking physicians, especially those who lack a grounding in the sciences on which medicine rests, who are ready to try anything and everything in the hope of curing, without perhaps a proper conception of what they are attempting to cure. Some physicians give "alteratives" but they have a very hazy idea of what they really are trying to alter. Similarly they give tonics without understanding the needs of the body. I am reminded of a recent occurrence.

A friendly druggist gave me a sample package of a "laying tonic" for hens. The package says, "It insures egg laying without forcing, is absolutely harmless and promotes health. Try it at our expense; enough for six hens for twenty-one days." A poultry book accompanied the sample, which told how to build a properly lighted, drained and well ventilated chicken house, in fact, giving much good advice regarding the care of chickens. Here are the directions given for using the sample of "laying tonic":

"First separate six fowls for the test. Put 1 level teaspoonful into 1 pint of mash feed. Besides this, feed dry grains liberally twice a day in a 6-inch deep litter, so that fowls will work for it. Keep oyster shell, grit, beef scrap and pure water constantly before them.

"A good mash can be made as follows: For cold weather—October to late spring—feed mash first thing in the morning. Two parts cut alfalfa or clover, two parts mixed feed or wheat bran, two parts cornmeal, one part green cut bone or beef scrap, one part table scraps. Add a little salt. Add boiling water in sufficient quantity to moisten every portion without making it sloppy or sticky. Cool somewhat before feeding."

Is any one who separates six fowls and follows these directions experimenting? One of the first rules for experimenting is to vary only one factor at a time, otherwise one can not draw proper conclusions.

Suppose a man is not feeling well, that he "needed a tonic," and that the doctor gave him a prescription, with elaborate directions how to take. Now every physician knows that what people need is an abundance of good food and proper housing—the "tonic" has little or nothing to do with it. But some people are so obtuse that they do not understand these things, and when they feel better the medicine is given the credit.

I occasionally see chickens cooped up, with a little runway, perhaps composed of cinders, with nothing green in sight. Twice a day some corn is thrown in. It is an utter impossibility for any "laying tonic" to make them lay. I similarly know people who are in want of food and fire, indeed of proper housing, and yet when they come complaining to a physician they may be given a tonic. If such people do not get well after trying different tonics and different medicines can they properly accuse the doctors of experimenting? Why doctors merely hand out a little medicine instead of properly investigating and pointing out things is another question. Shall we say that if people expect little of the doctors they get little? If a patient insists on a tonic she will likely get one.

There is another side to the question of experimenting. The physician in private practice can not afford to have the reputation of experimenting on his patients. Just how often a physician can "change the medicine" without getting the reputation of being an experimenter, is of course an open question. But aside from giving medicine anything out of the usual is apt to be regarded in the light of an experiment and if the patient does not clearly understand the why and the wherefore he is apt to regard himself as an experimenter.

But frequently patients themselves want to experiment, or rather they want "experimental evidence" that they are not dust victims. I tell such a patient that after all the assumption that he is a dust victim may not be true, that one goes largely by analogy, judging one by another, and that if he wants to experiment, why there is nothing to prevent him. I do not advise dust victims to experiment by wilfully exposing themselves, but if they want to do so I ask them to enter the experiment on their record and tell me about it. The dust victim soon finds that it does not pay to experiment, that there are enough unavoidable exposures to show him that dust infection is a reality.

In connection with the last mentioned patient fears and phobias should also be mentioned.

FEARS AND PHOBIAS. Individuals who are classed as neurastheniacs, especially those who have active minds, are subject to all sorts of fears, at times to phobias. Fear is inborn and may be said to have a good foundation, phobias are excessive fears often lacking substantial ground. Phobias may shade off into insanity. Fear is an instinct; in proportion as we fear and avoid dangers we are apt to survive. Fear shades off into worry, especially where the individual does not reason about causes. Take, for instance, the neurastheniac who complains of pains in the chest and fears tuberculosis. He may lie awake at night and worry. This is especially true in those who have had a death in the family or among relatives from tuberculosis. The same is true again of individuals who have a pain, perhaps a recurrent pain, in the region of the stomach. They fear cancer of the stomach, just as another may be led to fear heart disease or kidney disease. Now as a rule the pains and aches of the neurastheniac are due to environmental influences rather than to disease or the beginnings of disease, and when the matter is properly explained (especially if the individual is a dust victim) they dismiss the subject and no longer lie awake at night wondering what it all means.

DUST FEAR. When I first realized the possibility of infected dust I developed a "dust fear," but in the course of years I came to the conclusion that the very fact that I was alive showed that after all one's fears may be largely groundless. As one develops a good air conscience one naturally avoids places where the air is suspected and under good air conditions dust fear may not come into consciousness at all.

When I first began to discuss these things I now and then met individuals who developed a similar dust fear, or to give it a technical name, Conophobia. I can now see that often it was my fault that this happened, that I did not fully explain. In attempting to show the dangers of dust one should also explain that the very fact that the individual is still alive shows that he has escaped all sorts of dangers and now that he is warned he will likely suffer less than in the past. To be forewarned is to be forearmed.

To cultivate a healthy fear of dust and to acquire a good air conscience and avoid worrying are worth while. It may even be desirable to make a radical change of one's surroundings. As a matter of fact every now and then some of my "best patients" leave the community, following my advice to get better air.

In discussing this subject one of my patients related an experience that shows the genesis of fear and his attempts to get rid of worry. When Mr. — reached the age of puberty he began to go to the barber. He went for several years; occasionally there was a little scratch or a cut on the face or a pimple would appear, but he never paid attention to them. Then one day a little cut was followed by barber's itch and he had a serious time in getting rid of it. After that he was apprehensive of every little scratch or pimple. He was in constant dread of barber's itch. About that time safety razors came on the market and he promptly got one and shaved himself. Then all fear of barber's itch vanished, except for a short time each month when he went to the barber to have his hair cut and get shaved. Then he again carefully watched his face and always looked for the worst. Finally he decided to shave himself even at the time of the monthly hair cutting.

HOSPITAL PHYSICIANS AND PHYSICIANS IN PRIVATE PRACTICE. For several years I was physician among the insane, and that means among other things that one does not have to look after the financial side of the practice of medicine, and it means, too, that one can give an individual much time and attention wholly without any thought of getting any returns. Occasionally some of my

old hospital patients come in for advice, perhaps under the impression that I still have lots of time and will discuss things in detail.

I recall a young man, one of my former hospital patients, who consulted me regarding the question of getting married and starting a store in a small county-seat. He complained of the seant attention his home physician gave him (he came from a distant county) and remarked on the difference between hospital physicians and those "on the outside," that the latter had little time or took little time for discussion, and that some spoke dogmatically, as though there were only one side to a question. I had to point out that strictly speaking his "case" was scarcely one for the ordinary physician, that the general practitioner was concerned with ills, with "treating the sick" and that many are so busy doing this that they have no time to discuss such problems.

The man who has once been in an insane hospital and then thinks of getting married may be confronted with all sorts of questions, especially in the small village where everybody knows everybody else and where people are suspicious of a man "relapsing," of becoming insane again, although the chances of doing so may be very remote.

This young man had a mate in view but had never sounded her regarding her views of marrying a man who had been in an insane hospital, he was too conscientious to attempt concealment.

Now I myself was very busy at the time and I too was "on the outside." I was no longer a hospital physician with lots of time to discuss topics of remote interest to me. To what extent does one express himself dogmatically under such conditions?

But there was one aspect of the question that was of interest to me. The man had a rural ancestry and had always lived on the farm. When he tried town life he reacted, mentally, and then was sent to the insane hospital. If he now went to live in town would he fail again? This was a question to which I was willing to give time. I strongly advised against leaving the farm, and in the light of what is said in this volume the reasons must be clear.

At the same time I told him if he did go to live in town in spite of my advice to keep me informed—I was after data, of course. What the ultimate outcome was I do not know.

I charged the young man a small fee (two dollars, one-fifth of what he told me he had expected to pay), and he again spoke of the difference between hospital doctors and those on the outside—he evidently still regarded me as a "hospital doctor," although I was in private practice. I pointed out how men chose hospital positions. Some went on account of the practical experience, a few followed it as a career. (Most men get tired in a year or two on account of the monotony—one knows for months and for years in advance what sort of cases come before him, monotony palls.) Some went on account of the opportunity to save enough so they can "stand it for a time" while waiting for patients in private practice. (I belonged mainly to this group.) Some men disgusted with the private practice of medicine preferred to have a salaried position and have no concern about the matter of fees at all.

He had never thought of these things—nor have many others. The "outside physicians" must more or less constantly consider the bread and butter aspect of the practice of medicine. Is it any wonder that the general practitioner gives some people scant attention? And is it any wonder that many refuse to enter into movements looking to municipal or civic improvements? Matters of purely civic importance are only too often made matters of politics and people take sides—and get abuse. Many physicians do not care to do anything that does not naturally fall within their professional spheres—and to some that sphere is a very narrow one.

Every now and then we read about the "wonderful advance of medicine" or of sanitary science. We are told what the government has done in Panama, in Cuba, and in the Philippines, how it has altered unsanitary surroundings and reduced the death rate. And then some people wonder why the government does not interest itself in people nearer home.

When one considers to what extent the insane in our State

institutions are made comfortable and ill health is prevented, one begins to realize how much a community could do, especially for the poor who are a constant foci of infection to others.

MEDICAL SUPERVISION. HEALTH SUPERVISION. One of my old patients years ago while living under city conditions had much ill health but while employed about an insane hospital had good health. On going back to city life his health again failed; when he came to me he thought his time was up. The one factor that he had to consider was the air factor. Country life soon set him up and then he again got employment at the insane hospital and here at the same time he was under medical supervision, that is he was daily seen by the hospital physicians who gave him timely attention. As a consequence his health is now better than it had been for many years; one may say he has taken a new lease on life.

If there is one thing that is given careful attention at that hospital it is air conditions, as I know from many years' close observation, and on this account the common ailments, so prevalent in the nearby town during the closed door season, are practically absent.

The subject of health supervision will be considered in connection with cardio-vascular cases to be cited later. I may here say that for some time I have been giving special attention to such cases particularly from the standpoint of health supervision, of preventing ill health or symptoms of ill health, and shall I say symptoms of old age? The term refers to changes in the heart and blood vessels.

Choosing a title for this volume has been a puzzle. Since this volume is intended for people in ill health, the title should show this, and yet it should not be one that is repellant or that limits the field too closely, and on the other hand it should not be so broad as to deceive the man who really is not concerned in the subject of ill health.

I have in mind a volume that recently appeared, "Old Age Deferred." It is really a volume that appeals to a limited number of physicians, and yet the title, as well as parts of the book, appeals to nearly everybody. But after all the one great factor that our people, in contrast to European people, have to guard against is practically not mentioned at all. This is the factor I am trying to bring out in this volume.

People in chronic ill health often live on to old age, but it is a life of more or less constant misery. I am trying to tell, particularly the "old chronics," how to reduce symptoms, pains and aches of all kinds, to a minimum. Moreover I am not concerned with complicated directions that only a rich man can follow, but with simple advice which practically any one can follow, but of course only fully by those who are really able to take care of themselves, with all that that implies.

We hear of the formation of Century Clubs—among men. Many men are willing, indeed anxious, to live a hundred years, but we do not hear of women giving expression to such a thought. They would rather not live so long but lead a full life, a life with a minimum of ill health. They would rather live a full life than a long life. Many people who reach old age do not enjoy life, and, most important, do not make life pleasant for those about them. Would it not be best for the men also to seek a full life rather than a long life? "Old Age Deferred." That title appeals to every one. Old age is something we like to ward off. After all it may not be measured by years. Some men are old at forty, others are young at seventy, well expressed by the old saying. A man is as old as his arteries, in fact, he is as old as his weakest organ-it may be the thyroid gland or it may be the "nuciform gland"! I have no desire to criticise that volume but I do wish to say that many are misled by the title. It is not a popular volume and indeed is of value only to physicians and not even to every physician. It is a translation of a German book, written by a physician who practices at a fashionable German health resort, one patronized only by rich people, those who can

afford the best that Medicine has to give. Although the influence of "good air" is repeatedly mentioned, to say emphatically that everybody should live on the edge of town or have his own park or bit of woodland must be regarded as a ridiculous solution. How many people can live up to such advice? And that brings us back to the old question. What is good air? What is its opposite?

Moreover a poor man can not afford to have a physician look him over at short intervals and give timely advice, he must do the best he can under limited circumstances. And yet if he properly understands the subject he can accomplish much in reducing his symptoms of ill health to a minimum; he will always find physicians at home, acquainted with local conditions, who will help him.

I end as I began, choosing a title for this volume has been a puzzle.

VII.

CARDIO-VASCULAR AFFECTIONS

OR HEART AND KIDNEY CASES.

In the cases so far mentioned the physician can not accurately if at all predict the outcome. The individual, the patient, may die early or he may long outlive the physician who perhaps predicted an early death on insufficient grounds. There may be, and usually are, many factors to be considered. Prudent people who take care of themselves and heed warnings, that is symptoms, are apt to live on and on, perhaps die of "old age" (this however usually means some "terminal infection"). Others go ahead and take no time to rest or to give nature a chance to overcome infection or attacks of ill health; some disease appears and terminates life. There is much truth in the old saying, Acquire an incurable disease and live long, only we must know what that means. Usually there is no disease at all, only ill health not arising to the dignity of disease. It is usually old chronics who live long, the robust go to pieces quickly and prematurely, especially under unsanitary city conditions.

In general one may divide individuals into three great groups according to the blood pressure, those with a low pressure, those with a medium pressure, those with a high pressure. The average individual in health has a medium pressure; if the physician wants to study him he must look him up. People with low pressure tend to end especially in such diseases as consumption and catarrhal pneumonia. Low blood pressure however is not incompatible with long life, if care is taken to keep away from infection, to live under good surroundings and heed symptoms or warnings. High blood pressure on the other hand tends to so-called cardio-vascular affections, especially heart and kidney diseases, in apoplexies, paralyses and Bright's disease. It is in high pressure cases that the physician can often pretty accurately predict the outcome.

The increase in recent years of heart and kidney diseases has

become quite noticeable. But we must consider that many other diseases have greatly diminished. Some of the formerly great epidemic diseases no longer occur at all among us; they are kept away. While writing these notes cholera is being kept out of our country. In the end of course all must die, if not from one cause or disease then from another, and yet when all factors are considered the increase in heart and kidney diseases stands out, noticeably among people who are young in years. One may naturally expect a giving out of parts of the body, of blood vessels, for instance, in old people, but one would not expect this in those who are still comparatively young. Acute specific disease may of course attack persons of any age and carry them off, but as a rule apoplexy and paralyses and Bright's disease are not classed among the acute specific diseases; they are ordinarily not considered as having any connection with "germs."

Symptoms are commonly divided, as stated above, into subjective and objective, those that we ourselves feel and those that we can see in others. We may have a headache or feel nauseated, but unless we tell another of it he would not know it. We must take a man's word for the things, symptoms, we can not see; such symptoms are subjective. Cough and vomiting on the other hand are objective symptoms, or signs.

At times a man will say he feels feverish, and yet the thermometer may fail to show any elevation of temperature, he feels so only. A man may complain of being sick and yet the most skilled physician may fail to find any evidence of disease. There may be only a transitory reaction.

Again a man may say he has the "best of health." He applies for life insurance; he may pass a good examination—until the urine is examined and the blood pressure is taken, then he may be rejected promptly. He may be wholly unaware that he has albumin in the urine or that he has a high blood pressure and that there is danger of a sudden termination of his life. Unless such a man is examined by a competent physician he may not learn about his condition at all.

Does the presence of albumin in the urine constitute a disease or is it merely a symptom or an indication of disordered functioning? The same question may be asked regarding a high blood pressure. Various causes may bring on such symptoms and yet the physician may hesitate to speak of disease. Often it is a matter of quantity. A trace of albumin or a slight elevation of pressure may be disregarded as not signifying anything; much albumin or a very high blood pressure indicates danger. When does health shade off into ill health and into disease and finally into death? To what extent do data enable us to predict? Prediction is the test of science.

All sorts of people, patients, come before the physician. All complain in some way or other. Why should they come to him unless there is something the matter? Unfortunately the doctor has no instrument to test the presence of pain and its intensity, he must take the patient's word for it, just as the patient must take the doctor's word for it that albumin and a high blood pressure are present; exceptionally he may demonstrate their presence, as to the man who has had high school or college laboratory work. Some patients find it difficult to convince the doctor that there is something the matter; they will not believe the doctor who tells them that it is all imaginary—just as the doctor finds it difficult to impress some men that there is something the matter, as when he examines a supposedly healthy man for life insurance and finds albumin and a high blood pressure.

Some people are constantly running after the doctor for all sorts of trivial complaints, often mere symptoms of discomfort, and so in the end the doctor may tell his patient to ignore slight complaints, that there is nothing the matter, meaning "nothing organic the matter." At the other extreme again are people who refuse to consult the physician at all, although there may be something radically wrong, the man, as just mentioned, with albumin and a high blood pressure, perhaps in imminent danger of death from "heart disease" or "kidney diseases," either one or both combined.

There are all kinds of symptoms of perverted or abnormal

functioning of the organs of the body. When we feel perfectly well or healthy there are no symptoms, we do not speak of "symptoms of good health," only symptoms of ill health or disease. Some people always complain, some never. Some people readily talk about their ailments, others think it beneath their dignity to complain. Some people when they first come to a new physician get much attention but in time they may be told their ills are "imaginary," and then they go elsewhere.

There is an old saying that chronic diseases are mainly of our own making; it goes back to the days when the opposite was believed of acute diseases, that these were sent by Providence or were unavoidable. But since the causes of many diseases and conditions of ill health have been discovered, such sayings lose much of their force. Many acute diseases and especially epidemic diseases are wholly preventable, especially by a combined effort; the individual alone may be powerless. We need only think of cholera and yellow fever and the plague. On the other hand some "chronic diseases" are as unavoidable as they are unpreventable; they are incident to the human body, sooner or later disturbed functioning will appear, and in the end all must die.

Many chronic diseases are due to a man's occupation. Some occupations are classed as dangerous, tending to shorten a man's life on account of diseases. Knife grinder's rot and phossy jaw are handy names. A man may know better than to take up a risky occupation and to continue at it, but as a matter of fact we all know that some continue after being told by the physician that to continue is to commit suicide. The poor man with a family may know better but what can he do away from his trade? He is apt to work on as long as possible. Plato long ago said:

"When a carpenter is ill he expects to receive a draught from his doctor, that will expel the disease by vomiting or purging, or else to get rid of it by cauterizing, or a surgical operation; but if any one were to prescribe to him a long course of diet, and to order bandages for his head, with other treatment to correspond, he would soon tell such a medical adviser that he had no time to be ill, and that it was not worth his while to live in this way, devoting his mind to his malady, and neglecting his proper occupation; and then wishing the physician a good

morning, he would enter upon his usual course of life and either regain his health and live in the performance of his business; or, should his constitution prove unable to bear up, death puts an end to his troubles."

We also hear of the rich man, perhaps the captain of industry, who has been told he is committing suicide by "working under high pressure." Heart and kidney diseases are considered as "high pressure diseases" par excellence. A man may know that his occupation, "making lots of money," is killing him but in spite of his physician's best advice he will persist. Some want to continue a year or a few years longer and then retire, but they die before the time is up, or they are so worn out when they do retire that death soon overtakes them.

Country boys are constantly flocking to cities. Some succeed, many fail. We are apt to hear of the successes but not of the failures. The boy who is unable to "bear the pressure," to "stand the racket," is apt to return home disabled, perhaps by tuberculosis or some other disease incident to the massing together of humanity under conditions not conducive to health and longevity. Perhaps one in a hundred succeeds in bearing life in the large city. When the successful man visits his old home we hear much about him, how well-fed and healthy he looks; his example leads many boys and young men to try city life also. The physician knows that people can not be judged by their appearances and that many who seem in robust health die suddenly and prematurely.

One almost comes to the conclusion that poor people who can not "keep up pressure" die from tuberculosis and similar wasting diseases, while rich people die from heart and kidney diseases. Such a general statement of course needs qualifying but it seems true in considering the past family history, whether the ancestry is urban or rural or to what extent weeding out on account of unsanitary city conditions has occurred.

Physicians have a saying that a man is as old as his arteries, meaning the extent to which his arteries have thickened or har-

¹ What the workman should know is that the physician has no "cure" for many ills and that there is no healing herb growing in the garden or woods. He must learn that many ills are of his own making, if they are not due to personal neglect they may be due to the neglect of his employer or of the community as a whole. Here we see the advantage of Unionism, in asking or demanding sanitary reforms.

dened, either through disease or from internal pressure on account of a strenuous life or on account of living under unsanitary conditions. Such a saying may of course also be applied to the condition of a man's lungs, to what extent they have been destroyed or put out of use on account of elogging up.

We read of aged Indians and old out-of-door people having arteries "soft as a child's." All physicians know that the lungs of a country man are pink and those of a resident of a smoky and dirty city are black as coal. The city resident may early begin to have hard arteries "to stand the pressure," just as his lungs become black on account of the large amount of carbon particles and dust of all kind inhaled. The anemic consumptive dies prematurely, just as the robust short necked apoplectic man is apt to die prematurely, if not from apoplexy then from Bright's disease.

At times families show a tendency to die from some diseases, or group of diseases, there seems to be some "hereditary tendency." Some people expect to die as their father or mother died. Again, at times people will say, "Why we never had such a disease in the family," as tuberculosis, meaning they do not believe they have such a disease or that they will die from it, because "It is not in the family."

But often the influence of environment is greater than that of heredity so-called. People may die from tuberculosis, because exposed to it as none of their ancestors had been. Life in a city is radically different from life in the thinly settled country, in the former the active cause of consumption (tubercle bacilli) is all about, in the other it may be wholly absent.

In the Introductory I referred to the influence of heredity and of environment, telling of an Indian and a white man who applied for life insurance and how the white man lived on and on although he had been rejected. The usual explanation is that the Indian is not accustomed to a life of civilization, to a life under more or less pressure. We similarly speak of white people who are not adapted to the "high pressure of city life." The Outlook for September 16, 1911, says: "The death rate among the Indians of the United

States is two and a half times as great as among the whites . . ."
But we should keep in mind that the Indian is still living in the open. One wonders what his death rate would be under city life.

When we question what is meant by "high pressure" we are apt to get all sorts of indefinite replies (except from those who have studied blood pressure in arteries). The "strenuous life," the struggle for riches, the desire for fame, etc., are expressions that by many are considered synonymous with "high pressure." But we may at once ask, Under what conditions?

What is meant by high pressure life and where is such life carried on? What distinguishes the high pressure man from the low pressure man? We all have some ideas on the subject. It is generally agreed that the high pressure man lives in the large city where competition to make a living and get riches is keen or fierce. The farmer leading a quiet uneventful life is not apt to be accused of leading a high pressure life. A man's surroundings have much influence.

The subject is a vast one and all sorts of replies may be made to the query of what constitutes high pressure life. In a subsequent volume I shall confine myself to one phase of it—high pressure as shown in the blood vessels. This may be measured by proper instruments, just as the pressure of a boiler can be measured. Perhaps we are justified in saying that some men like some boilers are working under high pressure and are in constant danger of blowing up. Some blow up early. One can go a step further and say that men like boilers all come to an end, some rust out, some blow up. Some blow up under comparatively low pressure, often well rusted.

High blood pressure effects as a rule begin to show themselves toward middle life. For one thing those who tended to perish from low pressure affections, notably tuberculosis, perished early. The child of high pressure parents is apt to live through an atmosphere that tends to destroy others through tuberculosis, he is the survivor of the fittest. Strong respiratory mucous membranes that can stand heavy city air laden with soot and cinders and acids

due to the combustion of coal as well as diseases of all kinds; a strong digestion able to keep up HCl; a strong nervous system that can work many hours a day without breaking down; similarly a circulatory system that can keep up pressure and keep the blood coursing through the vessels, all these are necessary to reach at least middle life in the large and dirty city.

Nowadays comparatively few die from accidents or in wars. People die in bed rather than "with their boots on." In older times it was different and in savage times wholly different.

A very interesting question to the physician is how do city people with a long-lived country ancestry end? Are they likely to live long?

Why do some families tend to die from diseases attended by low blood pressure, others by a high blood pressure? At what age do members of such families fail? The death of a small child or of an old man or woman may mean little to a community. The death of a middle-aged man with a large family of children may mean much. To what extent is the community responsible for the death of the head of a family and responsible for the care of his children? These and similar questions are receiving more and more attention.

I have referred to this subject very briefly because I intend to take it up in detail later. Here I merely wish to bring out the point that a dust victim may be apparently very robust, that he may not at all fail through tuberculosis or catarrhal pneumonia or through loss of strength, but that cardio-vascular failure may come on suddenly.

In the original outline for this volume it was planned at this place to cite a number of illustrative cardio-vascular case reports, beginning with early ones that were misunderstood, just as dyspeptics and neurasthenics had been misunderstood. But case reports are of such variety and there are so many little things that should be mentioned that I finally came to the conclusion to devote a separate volume to them, especially since the subject of health

supervision must be considered in some detail. Here I shall mention only one cardio-vascular case on account of the discussion of symptoms, that symptoms may be considered as warnings to be heeded, perhaps as blessings in disguise.

Mrs. — Middle-aged well-to-do housewife. (We have not yet reached a stage where we can mention a patient's, or the family's, income to enable the reader to get some idea of an individual's ability to fully live up to medical advice—in the light of this volume, to good air advice, with all that that implies.) She came to me complaining of a train of symptoms, especially nervous symptoms, that at once directed my attention to the possibility of cardio-vascular disturbances. I found a high blood pressure, as expected. I soon came to the conclusion she was a dust victim and that the high pressure was dependent on exposure to bad air. At the very first interview I told her of my observations on similar cases; by watching air conditions she likely could verify my ideas. She was willing to observe and keep a record. In the course of a few months the idea that her high blood pressure was due to dust influences was fully verified.

This patient reported at first weekly, then bi-weekly, and finally once a month. During these consultations a number of topics were discussed, and because she was philosophical, some topics were taken up that are ordinarily not considered at all.

With such a patient one can consider health supervision in detail, how much or how little is to be expected from it. One can discuss details that one would scarcely think of taking up with the individual whose whole life is a constant struggle for existence and to whom sickness and inability to work spell disaster.

Here and there in this volume I referred to discussions I had with patients in whom there was no marked organic change, who under good air conditions would likely go on for years. But there is another class of patients, cardio-vascular cases, the kind just mentioned, in whom on account of high blood pressure there may be a more or less marked change, especially a thickening of the blood vessels to resist pressure. How long such an individual will

last is a problem. It may be a matter of a short time only, but with prudence he may last for years even though one feels that the span of life is very uncertain. To what extent shall conditions be freely discussed with an individual of this kind? Here we must at once distinguish between those who are philosophical, who look things squarely in the face, and the opposite, those who if they knew the real condition of affairs would "fly to pieces." (Shall we speak of a third group, the religious, who believe they are in God's hands and take no care of the morrow? Some of them call on the physician at the eleventh hour when little or nothing can be done. Shall we add that the world is advancing and that even the fatalistic Turk is outgrowing old time beliefs?)

As a general statement it may be said that the intellectual and those in easy circumstances who need not worry on account of financial conditions belong to the former class, while the ignorant and those in straitened circumstances as a rule belong to the latter—people not apt to read this volume.

In order to teach the average patient the physician must appeal to his intelligence and past experiences and use suitable illustrations. Some learn with difficulty, some are apparently unteachable. On the other hand is the exceptional individual, shall we say he belongs to the class who are readers? (Out of the many local library users the vast majority are only novel readers). He is the individual with whom one can discuss things frankly, things that one does not discuss with the average individual who comes to the doctor's shop. It is necessary to refer to this matter in order that the remaining portion of this volume will be properly understood. Often one hesitates to speak freely about some topics for fear of being misunderstood. Needless to say in making verbal explanations one always feels his way, statements can be immediately modified, objections answered and adverse criticism that one gets by rushing into print avoided.

The following topics have been discussed with comparatively few patients and that means opinions are subject to revision and correction, many are topics upon which opinions differ widely. Laving in Isolation. The above patient had learned in the course of time that she had least ill health, or disagreeable symptoms, by living in isolation, by rarely going into crowds. Because she rarely went into crowds, she was regarded as peculiar, a fact which she realized but said she did not care. She looked the picture of health; when she did attempt to explain her condition and ill health she was not understood. She preferred to live in isolation and be misunderstood rather than go out and make misunderstood explanations. Not knowing where the real danger lay she went to extremes and yet in spite of being "exceedingly careful" she had more or less ill health. After her attention was directed to the dust factor she knew how to guard herself properly and at the same time she realized that there was less need of isolation, her only requirement to have good health is good air.

She is literary, fond of reading and discussing literature, but opportunities to take part in discussions are limited. I have repeatedly met individuals of this kind and several times I have advocated the formation of a "High Pressure Club," that is, for people of kindred ailments and kindred minds to meet now and then, under suitable air conditions, of course, to discuss topics of mutual interest. But there are too few in a small community whose minds are really kindred and so nothing came of the project.

Patients of this kind as a rule are interested in reading the biographies of literary people who had chronic ill health. They readily understand the air factor, likewise why such individuals may have needed the contact of kindred minds, perhaps only to be found in large cities, while health conditions demanded retirement to the pure air of the country, as in the case of the Carlyles, who mentally required city life but physically country air. Samuel Johnson says:

"There is indeed no need of research and refinement to discover that men must generally select their companions from their own state of life, since there are not many minds furnished for great variety of conversation, or adapted to multiplicity of intellectual entertainments."

TO WHAT EXTENT SHALL ONE ADVISE A LIFE OF SECLUSION! Every physician knows that patients if put on a certain track often go to extremes, something which one may greatly regret. The individual who has a tendency to lead a secluded life may become practically a hermit. On the other hand, to advise a life of more or less seclusion to one who is fond of society may mean the prompt termination of the relationship of physician and patient. For instance, a middle-aged woman, very fond of society, came to me complaining greatly. I concluded she was a dust victim with a high blood pressure. There may also have been kidney disturbance but she objected to any examination to give certainty. She wanted to know if I could not simply give her some medicine or some good advice. I promptly advised her along the line of pure air requirements. When she fully understood what this meant, to go out less into society and into crowds of all kinds, she suddenly exclaimed, "Don't you have any social aspirations yourself to realize what your advice to me means?" What shall one say in reply? This woman was mentally the opposite from the one just mentioned; a free discussion was entirely out of the question. I merely said that a physician could simply advise; the patient would have to decide whether to follow the advice or not. Had she been a relative or a good friend, I should have insisted that my advice be followed. When she found I had no curative medicine and that in order to feel better she would have to cut down on social affairs, she did not become my patient at all.

Going to Church or Not. If a physician is satisfied that going to church has a bad influence on states of health, should he advise the patient to remain away?

Now we all know that a certain class of individuals place religion above everything; some who are born into a certain religion think they can not get along without it, and if the physician were to tell them not to go to church they likely would promptly change doctors. This is especially sad in the case of old people who believe they must go down town to church almost every day and on

this account are in constant ill health and misery. There are very few individuals with whom one can discuss this question freely.

It should be kept in mind that in a small community all sorts of people meet in the same church. The very cleanly and those the opposite come together. Those coming from clean suburbs and those from what amount to slum districts meet. One can point out these things and how in large cities churches will be found in the clean suburbs, attended only by cleanly people, where air conditions are unobjectionable. If a patient is very religious one can advise a removal to a community where churches are kept clean and well ventilated, and where the importance of sanitation is understood. Here is a pertinent clipping from the Western Christian Advocate of May 12, 1909:

"THE DOORKEEPER IN THE HOUSE OF THE LORD.

"Some one, somewhere, some time ought to establish a college of janitors. The ignorance of the average janitor as to problems of sanitation in public buildings, the regulation of heat, and particularly of proper ventilation, is immeasurable. Church trustees generally hire the lowest bidder to take care of the church, open and close the doors, sweep and dust, and make the fires. The functionary is ignorant of the most elementary principles regarding fresh air, and in fact seems to have an antipathy to it; it hinders getting the auditorium quickly heated. It never occurs to him to effect a change of atmosphere after one congregation has used up all the ozone. Not infrequently ancient things in the basement send up through the registers hot air charged with staleness and mustiness. If the wind blows through the church-rooms once a week it is a liberal allowance.

Frequently a congregation breathing devitalized air, even when most interested, shows signs of drowsiness and stupidity after the first quarter of an hour. It affects the preacher, too, who feels that he's speaking in a kind of vacuum. His lungs are soon exhausted of their vitality. It's an immense pity that so often the whole service of worship—the comfort and profit of the people—the sermon upon which much care and labor has been expended—should be utterly spoiled by the stupidity of some incompetent janitor who gets the church too hot or too cold, too stuffy or too draughty. Architects should pay more attention to the heating and ventilation of churches of even small cost, and church trustees ought to pay enough for the services to "the sexton" to secure men of some knowledge, experience, and judgment."

Such a "fresh air" article should direct the attention of church people to the importance of selecting good janitors.

From general remarks I might briefly refer to a specific case: One day as I passed one of our large new churches on the street car, the colored janitor was standing in the doorway, arms akimbo, and just then spat a large mouthful of tobacco juice on the fiber doormat before him. (In the nearby High School I have seen the janitor spit into the hot air register—and I am told that at least one of the teachers did the same.) Is it necessary to say that no clean community would for a moment tolerate such conditions and that an enlightened congregation would be very careful in selecting a janitor? Negroes in whom the weeding out process has been going on only a short time and who have a high death rate from tuberculosis are least desirable as janitors.

Advising a Patient to Move. Cities vary greatly in cleanliness and especially in respect to the spitting habit. Some of my patients who complain greatly here do very well under a different environment. Shall a physician advise them to move? Those answering from a selfish standpoint will likely say No, for constantly to send away good patients leaves one with a lot of poor ones unable to get away. But when one considers the patient's welfare, puts oneself in his place, the matter assumes a different aspect.

As already mentioned, our streets are either covered with dust or mud and the down town sidewalks with spittle and floors of public buildings are not clean. It is difficult, almost impossible, to escape dust infection. Practically the only solution is to remove to a clean community. There are few unbiased individuals with whom one can freely discuss this question of moving, of leaving one's home town and friends. The physician who speaks frankly is likely to acquire the reputation of being opposed to a community, of being a "knocker."

KEEPING A DAILY RECORD. I have already referred to this in the case of ordinary patients. The question assumes a somewhat

different aspect with the educated, those who lead a mental life in addition to merely vegetating. In the one class a diary or a record may be very simple, in the other it may be complex. Some people, patients, are afflicted with insomnia; they lie awake at nights thinking all sorts of thoughts. Should there be a mention of these thoughts in a daily record, should patients be told to make an attempt to find out why certain thoughts come up?

At times the patient here under discussion would have a train of thoughts and an almost irresistible impulse to get up and write them out. Her previous physicians had told her to resist, not to get up, that it would only aggravate her insomnia. I advised the opposite course, both because the thoughts or ideas might be valuable and if not written down the remembrance might be wholly lost the next morning, and because the mind would perhaps be at ease after these insistent thoughts were written down. I advised that when there was an active train of thought either to get up or to write in bed, telling of my own experience in having accustomed myself to writing in the dark. My observations lead me to conclude that when this is done sleep usually follows. It seems some individuals will lie awake at night with a train of thoughts constantly going through the mind, while the moment these thoughts are put down on paper the mind is at rest and sleep returns. The number of patients with whom one can discuss such a "Seelenleben" is very limited indeed.

MENTAL INFLUENCES. NEGLECTING SYMPTOMS. Individuals vary greatly in regard to imagining things. Some with active minds are constantly thinking about things, even dream about them, while others apparently do not think or dream at all. The appearance of certain symptoms may cause a good deal of worry, merely by imagining all sorts of things. We dread what we do not understand. I have already referred to a patient lying awake at night. Shall we advise neglecting symptoms or shall we tell the patient to attempt to determine under what conditions this active thinking or active imagining occurs? But even the most active minded individuals have times when they feel dull and think-

ing is an effort. Perhaps here too one may make an effort to find the reason.

EUTHANASIA. In the family history of this patient "gradual death" has been the rule, that is, there has been much lingering sickness and much suffering before death finally occurred. One day she told me she dreaded dying that way, she would prefer to die suddenly. This naturally led to a discussion of the usual fate of a high pressure victim by apoplexy, although there may be repeated apoplexies and much paralytic disturbance before there is a "stroke" sufficiently severe to kill. Early strokes may simply disable, perhaps be followed by much misery, while those coming in later years are apt to kill quickly. If the individual can live in a manner to keep off early strokes there will likely be euthanasia, in fact he may die of some other affection than the familial one.

This is not a pleasant subject to discuss, yet if an individual wants discussion to get light, to whom will she likely apply? To whom if not a physician?

This subject naturally led to a discussion of views among physicians regarding euthanasia, a topic that is ordinarily tabooed. We both came to the conclusion that a physician should be careful how he talks about this subject, that a physician's function relates to the prolonging of life and palliating suffering in the incurable.

But not all want a sudden and painless death; the religion of some is opposed to this idea of sudden death, some pray against sudden death, they want time for extreme unction. On the other hand a preacher told me, "Be prepared to die at any time."

Herbert Spencer while doing newspaper work in the heart of London and putting in his spare time on his first book, relates in his autobiography:

"The offspring of the mind, like the offspring of the body, are apt to become objects of engrossing interest to which all other objects are subordinated. A striking illustration of this was furnished by me early in 1849, as I was taking my morning walk in St. James's Park. The weather was frosty; and, having a bad cold, I was coughing violently. Abrasion of a small superficial bloodyessel produced some appearances which I,

little the better it seems for such medical knowledge as I possessed, absurdly interpreted into spitting of blood, and at once inferred that I was doomed. As I walked on in saddened mood, my first thought was—"It will be a pity if I can't finish my book first." p. 406, Vol. I.

Herbert Spencer soon realized that bad air did not agree with him and he moved to the clean suburbs and spent much time in the open—and in the end died of "old age," aged eighty-three years.

Discussion of Symptoms. Symptoms have been briefly discussed in Chapter V. But there is another side to the question, one that can be discussed with only a few, with the philosophical. This is the beneficence of symptoms. Ordinarily it is assumed that symptoms (and indeed ill health and disease) are great evils, but arguments can be advanced in opposition, that symptoms are blessings in disguise.

It should be kept in mind that in cardio-vascular cases one can make rather sharp distinctions between subjective and objective symptoms, those which the patient experiences and which the physician must take on faith, and those symptoms or signs that may not be recognizable by the patient himself, at least seldom are, but which can readily be determined by the physician. For instance, all statements referring to pain have to be taken by the physician for what they are worth, he has no instrument to determine the presence of pain or to estimate its intensity. On the other hand variations in blood pressure, variations in the action of the heart, variations of urinary constituents and the appearance of abnormal substances may be wholly unknown to the patient and unrecognizable by him. Ordinarily a physician does not go into details regarding objective symptoms, or "laboratory findings," because few patients understand them, but he may to good advantage discuss subjective symptoms, and, in the case of the philosophical, show that the popular conception is not a good one, that as a rule symptoms are blessings in disguise; that they are warnings from nature to be heeded. The subject is a vast one; one can not do it justice in a brief discussion.

SYMPTOMS OF ILL HEALTH. SYMPTOMS OF DISEASE. It may be said that diseases are due to definite pathogenic or disease-producing causes, and on the other hand that common ill health is usually due to an abnormal environment, or to variable causes. Nature tells us through symptoms that something is wrong; by heeding the warnings and avoiding abnormal conditions symptoms will likely subside.

Language and letters enable us to express our ideas to others, both must be learned. Some ideas can be expressed by the illiterate, we need only think of the cry of a small child. But what a vast difference between the illiterate man and the educated chronic in telling about symptoms!

People vary greatly. On the one hand we find people who "go all to pieces" on the appearance of ill health and disease; on the other hand are those who are philosophical and remain calm. Time of course makes great changes, and the at first impatient may become patient and philosophical. The man sick for the first time wants to be cured at once; the old chronic merely asks for relief, to reduce symptoms to a minimum.

With some individuals there is no discussing symptoms, all they want is medicine that will cure. With some a physician must almost speak of symptoms as entities, as something to be "driven out," perhaps by a very disagreeable smelling or tasting medicine. To the few one can point out that many symptoms are due to an unsanitary environment (in dust victims) and that removal from the cause may be all that is necessary for symptoms to disappear. With an exceptional patient, the philosophical, as just mentioned, one can even discuss symptoms as beneficent processes, sent by Nature to warn us, or to enable her to repair damages.

With that rare individual who has some knowledge of Evolution the subject can be discussed from an evolutionary standpoint, of the survival of the fittest, and how Nature has weeded out those who do not heed warnings, and how the process is still going on today.

SYMPTOMS OF ILL HEALTH AS WARNINGS FROM NATURE.

In enumerating symptoms it is always a question how they should be given, in alphabetical order or in the order of their importance, and whether common or technical names should be used.

Anorexia. This is the technical term for loss of appetite, and whether this term is used or "Appetite, loss of," it would still head the list in alphabetical order, as it would also according to its importance, coming only after Pain.

Loss of appetite is very common, both in ill health and in disease. When a man is sick Nature takes away his appetite, and that means the stomach is getting a rest and the patient has to rest; and in the mean time Nature is repairing the damage, or fighting off the disease. The worst form of treatment is to insist on the invalid eating. (I am of course not speaking of the exceptional case where feeding may be required.)

At times we hear individuals say after an attack of typhoid fever, "after that I never felt better in my life." This means for one thing that he had been resting and fasting. Dr. Tanner fasted forty days, and so we need not fear starvation from a few days' fast.

ASTHENIA, which literally means lacking strength, is due to a great variety of causes. It may be due to anemia, a deficiency of blood, either in quantity or in quality. If much blood is lost from a wound or an injury we all know that by keeping quiet in time nature replaces the loss. If loss of strength as well as anemia is due to lack of food, proper food will restore normal conditions. Bad air may occasion an anemia that produces a great loss of strength. In fact the individual may get so weak that he must remain at home. There are all sorts of tonics but the best one after all is exercise in the open air, and in proportion as an individual does stay away from bad air conditions he gets better. The man who is wise will stay away entirely, or he will change his occupation or remove from an unsanitary environment. Many in ill

health must get worse before they get better, before heeding Nature's warnings.

Breath, Getting out of (Dyspnea). This is a very common symptom, especially among those not accustomed to exercise. When they do exercise beyond the extent to which they are accustomed the body rebels, Nature takes away the breath and the individual must desist. It is a wise provision of Nature, otherwise a weak heart might quickly go to pieces. But many individuals who are weak need exercise. They should start in gradually and the whole body, including the heart, will react and get strong, and then they are able to do considerable exercising without getting out of breath.

If the individual who is short of breath persists in exertion he is likely to faint and that will make him desist. Shall we say that that is an additional way Nature has of enforcing her warnings?

Cough. This has already been sufficiently referred to under Colds and Catarrh, as being a provision of Nature to bring up foreign substances, especially dust. If a certain cause brings on cough, the proper treatment is to avoid that cause and not to use a cough cure, which may simply numb the nerves of sensibility and thereby aggravate in the end.

CHILLING. Chilling is due to various causes, as previously mentioned. In cold weather it is a warning to keep out of the cold, or to dress warmer. To chill after a cold bath means to avoid cold baths. To chill after exposure to bad air means to avoid the cause.

Constipation. It may seem odd to mention constipation in connection with conservative or beneficent processes, and yet it has been claimed that a less amount of fluid makes the feces less a culture medium for injurious bacteria, that it is a provision of nature to help the body. Be that as it may, I find over and over in dust victims that constipation is to be regarded simply as a warning and if the warning is heeded and the environment is changed, the constipation subsides naturally.

EMACIATION. This may be dependent on a great variety of causes. Loss of flesh goes hand in hand with illness, and that means to rest, and often when an individual rests Nature is given a chance to correct the difficulty on which emaciation depends. If emaciation is dependent on food, as among the poor, the proper remedy is an abundance of nutritive food, not a little medicine, which often simply benumbs sensibility. If loss in weight is dependent on continued infection, with the body at a disadvantage, the proper remedy is to get away from the source of infection. If it is dependent on bad air the remedy is clear. If emaciation is dependent on the presence of pernicious disease, then the Lord help you—you are past the aid of man. We should try to avoid pernicious diseases in time. Much is preventable.

Fatigue. Fatigue spells rest from work, from whatever produces the feeling of fatigue or of being tired out. A man who is fatigued from hard manual labor requires rest; that is a truism recognized by everybody. A society woman who is "overworked" may also require rest. To the latter many things are a real task that to others may be a pleasure, as making calls or going to parties; the poor who make these at long intervals enjoy them, while one who does this constantly may find it a burden. Fatigue may go to the point of loss of ambition, that is a warning that many heed, and then Nature is apt to restore the balance. It would seem some cases of fatigue, so-called nervous prostration, are simply cases in which the defences of the body against infection are overworked, merely getting into good air causes the symptoms to subside.

FEVER. This may be said to be Nature's way of telling us what is going on during infection. Its height can be measured by the thermometer. Fever may really be a conservative process and physicians are careful how depressants are given, drugs that "break the fever." A mild fever may not be heeded by an individual, but when it is high he will likely decide to take to his bed. Rest

I am here not making fine distinctions between terms.

in bed is one of the best medicines, but unfortunately many are opposed to it, or were so in former days when the sick room was closed up tightly and darkened, wholly unlike the modern sick room in a hospital.

HYPERACIDITY OF THE STOMACH. This may be simply a provision of Nature to fight off infection; if it disappears in good air the remedy to a sensible man should be clear—get out. It may be added that the causes of hyperacidity as of high blood pressure are poorly understood and there are all sorts of theories and endless discussion.

HIGH BLOOD PRESSURE. Is this too to be regarded as a conservative process? Does it help the individual for a time? Often it goes to extremes and ends fatally. If a high pressure subsides by a change in environment, should the physician discuss the subject fully with his patient and advise him to make a change? (This was done in the case of the present patient—by living up to the pure air requirements her high pressure with a train of symptoms promptly subsided.)

INSOMNIA. There are many causes that produce sleeplessness, many of them dependent on environment. The countryman is unable to sleep near a boiler shop; the city man is kept awake by the crowing rooster. The natural time to sleep is at night when things are quiet, and for countless ages man has slept under such conditions; those who "turn night into day" are reversing the order of Nature. If a man persists with night work after being warned that is his lookout—he can take sleeping potions if he wants them. If sleeplessness subsides by changing the mode of life, that is the proper thing to do; similarly if others find they are able to sleep under good air conditions they should make a change.

MUCUS FORMATION. An excessive mucus formation is common in simple catarrh, so frequent in people who inhale irritating matter. The mucus is sent out to protect the delicate membranes and to entangle the irritating matter; when enough has accumulated

it is spat out. This subject has been treated under Colds and Catarrh. Unfortunately some individuals with cardio-vascular disturbance have no mucus formation and do not spit; everything inhaled seems to remain in the body. Mucus formation is most common in the throat. It is also common in the stomach. If a certain cause is known to produce it, the proper treatment is to avoid the cause. If that is not done the simple mucus formation is usually followed by pus; when this has gone to the point of corroding a blood vessel and there is a spitting of blood, the warning is heeded, but unfortunately often too late.

Pain. There is scarcely a letter of the alphabet under which a number of remarks on symptoms can not be made, but this is not the place to attempt a systematic enumeration. The subject of pain itself could be considered in many pages. Pain above all other symptoms is beneficent (with exceptions, of course). We see this in the case of a broken bone. With the least movement there is intense pain, that means to keep quiet; in proportion as there is immovability the broken bone knits together and is perhaps as serviceable as ever. When the stomach is inflamed or injured or irritated, there is pain when food is put into it; that means to keep food out until the damage is repaired. The sick dog goes in hiding and refuses to eat.

There are many different kinds of pain, different names. There is a "pain of the nerves," so-called neuralgia. This is sometimes said to be a "cry of the nerves for pure blood," often it is only a call for pure air. The pain may disappear along with any deficiency in the blood or "impure blood." Then there is a form of pain known as "rheumatic," but this may not at all mean real rheumatism. I feel convinced that much of the common rheumatic pain is simply a reaction to bad air conditions; the warnings should be heeded. When pain is very severe it usually is heeded.

A pain in the back does not ordinarily mean Bright's disease but may mean dust infection. Some individuals have acute pains at the site of an old injury, as during an acute attack of dust infection. Such a pain may be a veritable barometer and the indications should be properly read. Some pain is of course purely psychical, perhaps the result of misdeeds and the fear of being discovered; here there may be a clear relationship of cause and effect and of the remedy.

SKIN SYMPTOMS. Symptoms connected with the skin occur in variety. The face may be a good index of "bodily conditions and states of health," yet some dust victims "look healthy" and get no sympathy—so they suffer in silence.

Dryness of the skin is common in those with chronic ill health and on the other hand in many acute diseases excessive perspiration is common. Perspiration comes on from various causes, as undue exertion, either bodily or mental. In the man unaccustomed to physical exercise any undue exertion may turn to heat and perspiration; gradual exercise, increased from day to day, prevents this. In the palms of the hands blisters form readily on hard manual application, as after rowing; the soft skin is not adapted and rebels. By going about it gradually, exercising a little every day, the skin adapts itself, it becomes hardened and calloused. Muscles at first flabby soon become hardened and solid. These are adaptations.

The question of "becoming hardened" to bad air conditions is an interesting one. We all have heard how the Indian is "hardened" so that his whole body is like the white man's face, "all face"—and yet the Indian does not thrive under the conditions under which the white man lives in cities. Parents who attempt to "harden" their children by little clothing and by exposure to cold and giving cold baths may unconsciously enough be going on the theory of "cure or kill." Those able to stand such a "hardening process" may be nothing more than the survivals of the fittest, the unfit perish—better dress children warmly and avoid undue exposure.

In dust victims flushing, a sense of heat in the face, is very common. I tell my patients it should be regarded as a warning to stay away from crowded places where the air is bad. Many dust victims have an eruption of the skin, pimples. One may personify

Nature and say that is the way she teaches an individual to remain in seclusion. A dust victim under good air conditions may find that his face will soon clear up. This is a good argument for those who are fond of dances or theaters; their complexion clears up when they live in good air.

Sallowness may be regarded as a warning, as a conservative process. People when told they "look bad" are apt to make some sort of an effort to better their complexions, and that usually means their health.

When I was a boy of about twelve I had a chum who every Saturday afternoon blacked the family shoes. Occasionally I would help him, so he could play with me. One day he said, "If this shoe had a white spot on it that nobody could get off, I could get it off." How? "I would black over it."

That is the way some people change their complexion, they paint it over. Some "complexion cures" merely form a coating over the skin, and that too is the method of many a symptom-prescribing doctor who apparently causes a symptom to disappear.

To the very scientific diagnostician of diseases, pain, as a symptom, is of the utmost importance, in general we may say all others are of secondary importance. On the other hand to the general practitioner of medicine (not to speak of the specialist, the dermatologist) the skin is of the greatest importance, because its appearance in large measure determines people to consult a physician. Many will come only when they look bad, and when they are not benefited by advice, or medicine, resort to advertised "cures" of all kinds—complexion cures, pimple cures, eczema cures, dandruff cures, baldness, etc.

Some people, women particularly, may ignore symptoms, even marked pain—but a bad complexion is likely to be heeded. A "bad complexion" may be considered a warning that something is wrong in the body, the skin merely reflecting it. Symptoms are variously classifiable. Some manifest themselves locally, others generally or in some distant organ. Formerly we heard much of reflexes.

Some symptoms are modifiable, others not, they will either be present or absent. In many diseases there are characteristic symptoms with a variable number of secondary or minor ones, often largely dependent on environment. The tone or appearance of the skin may be an index of the general health. The man or child with a "bad color" or "sickly appearance" may go to the country, seashore or mountains, and in a short time return home with a different-looking skin, perhaps tanned, and then we may hear of a "healthy color." Such observations are of course only "skin deep." Our school children during the closed door season acquire sickly, sallow complexions, not to speak of actually becoming disabled. It is remarkable how they improve during the summer vacation—and how they relapse the next fall or winter. Why do not parents inquire into the causes or reasons?

The hair and teeth in their development are derived from the skin, as any embryologist will explain. The evolutionist might make any number of remarks on changes in skin, hair and teeth incident to civilization, getting away from the simple life.

The loss of teeth, of hair, and the loss of contractility of the blood vessels in the skin are incident to our altered mode of living. Soft food and a mouth full of bacteria are detrimental to teeth. Tight headcovering, compressing blood vessels and excluding light and air, and using comb and brush full of germs of all kinds (men in barber shops) are all factors in baldness. Primitive people do not know of premature baldness. Warm clothing and living in warm houses means a less active cutaneous circulation. In many indoor dwellers the skin seems to have lost this important function to a large degree—a fatal defect in cardio-vascular cases; the altered skin can not aid the failing kidneys.

Gray hair is a sign of advancing age. To pull out the first gray hairs does not retard the process of growing old, no more than dyeing the hair; neither does painting the skin help. But a good set of artificial teeth has been a boon to many a person in enabling him to properly masticate his food (often too well, leading him to overeat).

TINNITUS. Buzzing in the ears is a symptom due to a variety of causes, a very common one being an excessive use of quinine, so freely taken by many. To avoid the cause means to avoid the effect. Quinine is rarely indicated and should be taken only when prescribed by a physician; when it disagrees he can likely give a substitute. People use quinine for colds when the proper remedy is good air.

Buzzing in the ears is very common in city people; many ascribe it to noise, but more commonly it is due to dust. Tinnitus may be regarded as a veritable dinning into our ears to get out of an unsanitary environment. Many of my patients have found it so.

Only the other day I met one of my old patients who was greatly annoyed by a buzzing in one of his ears during the closed door season. He spent last winter in Florida, led an outdoor life and did not notice any buzzing at all until he returned. He has now practically decided to spend his winters in a warmer climate.

Vomering. This goes hand in hand with the first symptom mentioned, loss of appetite. If the stomach is irritated or deranged, Nature takes away the appetite. If a foolish man persists in forcing food down, it is vomited up, just as irritants generally are vomited up. The early morning vomiting has already been referred to as frequently being connected with the spitting up of dust-laden mucus. It usually disappears promptly on having good air in the sleeping room at night, or if need be also good air in the day time.

"Weak Heart." Here I am not attempting to make a systematic enumeration of symptoms, of which there are a large number, but one must at least refer to "weak heart" as a supposed symptom of heart disease. Some people, patients, are told, "You must be exceedingly careful, you have a weak heart." We may ask, Why? Why do people have weak hearts? Or shall we ask a patient who says he has a "weak heart," How do you know?

Some people have weak arms and legs. Reason, lack of exer-

cise. Some people have weak or feeble intellects. Some are born so but more often the reason is failure to exercise the brain. Some people have "weak hearts" because they fail to exercise and give the heart muscles some work to do. Muscular tissue when not used becomes flabby. The heart is a muscular organ, often it is the last organ to fail.

But every physician knows that the advice to take physical exercise must be given cautiously. At the one extreme are those to whom we can readily say, What you need is exercise, lots of it. At the other extreme are those who must be advised very cautiously, where the heart muscle has degenerated to such an extent that vigorous exercise is apt to be fatal at once, embodied in the saying, Do not run after a street car. This also applies to the man with a high blood pressure to whom sudden exercise may be fatal. Between these extremes there are all sorts of cases where the physician must carefully discriminate. On the one hand there is danger of overestimating and on the other hand of underestimating conditions and requirements. A supposed weak heart may really be a strong one and the opposite may be true.

In some individuals (those with hypertension) the heart may be exhausting itself in working against an excessively high blood pressure—comparable to using a force pump when an easy working pump only is required. The strain of keeping the blood in circulation may be all the heart can do; physical exercise, work, may promptly bring on dyspnea and that means to desist. But the high pressure individual may find that he can breathe well in good air—and that may be the solution for his difficulties, if he will only heed the warnings.

WORRY. And what shall be said of worry? One of the pet symptoms of the patent medicine man, of the symptom-prescriber and of the faith and mind curist is worry.

Worry is an old word; it goes back to times when life was simple, then worry meant to choke or suffocate. It was applied to an actual struggle, a taking hold of the throat. But in the course of time the term was applied to a mental state or condition

without perhaps a basis in fact. Today most of our worries are "in the mind."

People living the simple life have few worries; those leading the strenuous life under complex surroundings, as in our crowded industrial cities, have many worries, beginning with worry to make ends meet. But there are people who have such a desperate struggle for existence that they have no time to worry, at least they do not worry to the extent of those having ample time, and perhaps also a vivid imagination, and, shall we add, no proper conception of the relationship of cause and effect.

I do not continually tell my patients not to worry, for if they feel better they naturally cease to worry. Worry is often dependent on environment, it is often only a symptom of ill health. In many cases change of environment is the remedy.

Properly considered worry is a beneficent symptom. Worry should lead the worried one to look for causes—and then apply the proper remedy.

SYMPTOMS VS. AFFECTIONS. To draw a line between symptoms and affections is difficult, because symptoms shade off into affections or disorders, into minor maladies and of course into diseases. For instance, a loss of appetite may change into a something more than a mere symptom, just as the lack of blood may mean more than a mere symptom, and as a high blood pressure may in time be followed by a condition known as an arterio-sclerosis. A persistent irritation of the air passages may result in bronchitis, just as a persistent purulent catarrhal process may be followed by the production of much scar tissue with a permanently altered lining of the air passages or of the stomach. Repeated dyspeptic attacks may eventually terminate in a well-defined disorder, in a permanent impairment of the digestive function. It would seem that most of the common affections or minor maladies of civilized life are dependent on environmental influences, especially air conditions, and that means that they are largely preventable.

Common affections like common symptoms may also be looked

upon, especially in their early stages, as conservative processes, teaching man to do one thing and to avoid another.

DISEASES VS. AFFECTIONS VS. SYMPTOMS. Some symptoms have a variety of causes, just as many affections have a variety of causes. On the other hand, diseases, that is, specific diseases, may be due to one definite cause. We need only think of such diseases as typhoid fever, tuberculosis, malaria, etc. In the absence of the specific cause there is no disease. By eradicating the cause a country can be kept free from such diseases. In early days, before the rise of sanitation, there were many diseases now known only by name. Cleaning up, making cities sanitary, has caused their disappearance. The sanitarian emphatically insists, Let us clean up. Today when we are threatened with certain diseases, notably cholera, our cities immediately get busy cleaning up. They know that in proportion as they do clean up, they will escape. They no longer ascribe a "visitation" to Providence and those who say Let us pray are becoming fewer and fewer. A city may continue to use bad water, but the moment cholera or typhoid fever in epidemic form appears an effort is made to get a better water supply. Perhaps after all many of the great epidemic diseases are blessings in disguise, they teach us to clean up.

Unfortunately some diseases have gotten a good hold and are taken as a matter of course, notably tuberculosis, and no proper attempts toward eradicating the disease are made. Cleaning up and giving the people good air would cause tuberculosis largely to disappear, along with a host of affections scarcely rising to the dignity of disease. Many diseases have come in and flourish just like weeds, simply because we have neglected them.

Aches and pains, ill health and disease are very common under crowded and unsanity city conditions. Should symptoms be heeded? Should they be looked upon as evils, or as warnings from nature? The philosophical likely heed them and in so doing live on and on. Those who do not heed them perish prematurely. The heedless form a type that is not apt to survive. On the other hand

it is a well-known fact that chronics often outlive their physicians. The reason may not be far to seek: the chronic is constantly warned by his pains and aches; he never goes to extremes. If he finds a certain cause produces a certain effect, he avoids that cause. What many chronics need, as I have attempted to show in my case reports, is good air.

This view may be considered a philosophical one. It shows the importance of cleaning up. Such a view is diametrically opposed to the teachings of the faith curists who say symptoms and disease are imaginary.

The patent medicine man will also disagree. He looks upon symptoms differently; to him a loss of appetite means the taking of his "tonie" to create an appetite and "eat anything you want." To him backache spells Bright's disease and he advises the individual to dope himself with his nostrum. Cough is something to be "cured." Pain is a something to be "killed." And thus the poor and ignorant who get their medical knowledge from the patent medicine advertisements get the worst of it. The evolutionist may console himself with the thought that in time all these individuals will be killed off—for the betterment of the race. Intelligence and prudence pay.

From the standpoint of the evolutionist it would also appear that those who react to their environment are of the type that will prevail. One can reason from analogies among animals, those of new countries or islands that do not fear man are destroyed; in proportion as they do fear him and avoid him the species is perpetuated. Many species of animals have been exterminated in recent years simply because they did not fear man enough. Similarly men who fear disease, and symptoms, and flee from them, or still better through knowledge prevent their occurrences, are of a type to survive.

Perhaps after all there are compensations. Sensitive people can not do as those who do not react to their environment; they have pains and aches, they are warned, and if the warning is heeded, they live on and on.

VIII.

SPECIFIC DISEASES.

This volume does not aim to discuss specific diseases; all that is attempted here is to show how persons in chronic ill health may learn how to reduce ill health to a minimum, assuming that they are influenced by dusty air conditions. In order that the subject may be better understood, it is necessary to make a few references to specific diseases.

One can draw analogies between diseases and plants, as practically all our specific diseases like our worst weeds are introduced. Among our worst weeds are a few that are natives, but just how many diseases flourished before the white man came to our country is a matter that will never be known, because there were no competent observers among the first comers. Only a few diseases can be mentioned and commented upon.

MILK SICKNESS This undoubtedly native disease was formerly very common and fatal. It is practically extinct in our State, although a case, now and then occurs.\(^1\) The cause is found in certain localities, usually damp shady places, often fenced off to keep out stock. If cows get in they may contract the disease, known as "Trembles," and transmit it to man, presumably through the milk—hence the name Milk Sickness. Cutting down the forest and letting in the sunlight seems to be all that is necessary to cause the disease to disappear, just as many of our native plants disappear under the same conditions.

MALARIA. Whether malaria existed in our country before the white man came is a problem, perhaps not; most likely it was introduced. Malaria is due to a definite cause, a small ameba that lives in the red blood cells and destroys them. It requires for its transmission a certain kind of mosquito (Anopheles). The mosquito before it can transmit the disease must have bitten some one who has malaria. It can not transmit the disease without first getting it. It breeds in wet places; drainage causes the breeding places to disappear. The use of quinine causes the disease to disappear in man, and that means mosquitoes can not infect themselves. Moreover since the use of screens has become so common mosquitoes are kept out of houses. Hence by draining, by the free use of quinine (we know how people are constantly dosing themselves with it), and by the use

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¹ I am especially interested in this disease and its active cause. Every now and then I hear of cases, both of trembles in animals and milk sickness in man, but usually too late to make any investigation regarding the active cause, that means especially to make bacterial cultures.

Milk sickness is of especial interest to physicians of the Ohio Valley, where the disease formerly was common, because Eastern physicians who had never seen cases denied its very existence.

of screens, malaria has been reduced in its prevalence to such an extent that it must today be classed locally as a rare disease.

Malaria has been repeatedly reserved to in this volume, because it is so commonly confounded with dust infection. Some physicians realize that some of their patients do not have true malaria, they speak of "false malaria," a name often synonomous with dust infection. "A touch of malaria" is also frequently heard.

True malaria is by some writers held to have been the cause of the decline of Greek and Roman civilization. One almost feels inclined to take the view that the "False Malaria" which flourishes in cities and towns today is a powerful factor in present day race suicide.

YELLOW FEVER. This is a tropical disease, also transmitted by a mosquito, one with striped legs (Stegomyia). This mosquito occurs in the Southern States and may occasionally be found as far north as the Ohio River. Until a few years ago it was not known how the disease is spread and all sorts of precautionary measures were taken during an epidemic, including "shot gun quarantine." Three or four years ago several Yellow Fever victims passed through this town on the railroad; they occasioned no alarm whatever. To know how a disease is transmitted means to be able to guard ourselves and avoid needless precautions and useless alarms.

CHOLERA. 'Asiatic cholera has repeatedly come to us from tropical countries where it is endemic, that is, where it always occurs. It is now kept out by watching immigrants at the seacoasts, as at this writing. The disease, due to a definite micro-organism, is transmitted by getting into the drinking water; it is also spread by flies carrying fecal matter from the sick. Cities that have good drinking water and sewers and are cleanly generally have practically nothing to fear from cholera. The former "cholera fear" has practically disappeared.

LEPBOSY. A few years ago the newspapers had much to say regarding leprosy and the danger of its gaining a foothold. It would seem, however, that leprosy is a disease that has pretty well run its course among northern white people. Formerly it was very common in Europe and leper hospitals were to be found everywhere. Today it is a rare disease, and yet the occurrence of a case causes alarm. It is characteristic of the human mind to become alarmed at possible dangers but to neglect real ones. Thousands die from the ravages of a bacillus that is closely related to the lepra bacillus, namely the tubercle bacillus, and yet people take the presence of consumption as a matter of course.

SMALLPOX. Smallpox is another disease that formerly was very common but which now is rare and has lost its terrors. Some European countries are very strict in requiring vaccination and as a result smallpox is practically unknown. But there are countries less strict and smallpox

prevails accordingly, pocked faces are quite common. Smallpox was one of the first diseases introduced into our country. It was very fatal to the Indians who had never been accustomed to it. One can understand how a few out of the hundreds who perish may leave offspring that is more or less resistent and that with repeated exposure of the offspring finally a strain will be produced that is more or less resistent, just as in the case of rust proof oats. The story of rust proof oats is an interesting one. The ordinary farmer when he sees his oat field suddenly blighted plows it under. But a number of years ago one man more shrewd than the rest noticed that a few stalks survived. By cultivating the seed from this plant through successive generations he finally produced the "rust-proof oat." In the case of man there is another factor that must be considered, the admixture of more or less immune blood. Pure blood Indians are becoming more and more rare.

Measles is a very common disease of childhood. It has been among us so long that it only exceptionally attacks an adult. It is so mild a disease that many parents neglect to call the physician at all. Indeed in the country children get well without anything whatever being done. But when the disease attacks people who have never had it, as the Esquimos of the far north, or islanders in the South Seas, whole tribes may become extinct. Such people must undergo the process of adaptation. In this connection it may be mentioned that the natives of the West Coast of Africa are in about the same position in regard to malaria as we are to measles; adults are immune.

As a rule school children are free from "contagious diseases" during the summer but the moment they are massed in school houses certain diseases appear, notably measles, scarlet fever and diphtheria. Where children are massed closely as in schools such diseases readily spread. One of the most important functions of the physician is to make a proper diagnosis.

SCARLET FEVER. This in many respects resembles measles but is regarded as a degree more severe and the child that is neglected is apt to perish. But it makes a vast difference under what conditions scarlet fever, measles, and other diseases, including typhoid fever and consumption, are contracted, and where the victim lives. In the city with all sorts of infection about and the body constantly engaged in fighting off infection, these diseases may be quite severe, while they may be mild in the isolated country where in spite of improper nursing and the use of ordinary diet people recover. Indeed even the consumptive when sent out from the city in time tends to get well.

INFLUENZA, known also as La grippe, is a specific disease due to a definite cause (a small bacillus) whose clinical manifestations greatly resemble those of "colds," in fact to such an extent that during and after the prevalence of an epidemic a large number of cases are indiscriminately

dubbed "grip," especially by physicians who do not discriminate. Grip ordinarily is synonomous with "colds." Influenza has appeared at intervals of years and attacked almost everybody. The pandemic of 1889-90 was especially severe. But manifestations vary in different individuals. Most commonly there is an irritation of the respiratory mucus membranes with evidences of colds and catarrh and usually there is marked nervous depression. In some the digestive tract is greatly deranged. In others nervous symptoms predominate. One may speak of types.

The severity of the disease is largely dependent on air conditions, mild under good air and severe under bad air. Pat made an observation that is verified by many: "Influenza is a funny disease, you're sick so long after you get well," meaning that there are after affects. But we should keep in mind that Pat usually lives under bad air conditions, in the city, and that the farmer in isolation may have an entirely different story. Children at home before and after school age may suffer slightly while those going to school and inhaling bad air may suffer severely. In the country the disease is often so mild that a physician is not called. When Influenza reaches a people who have never had it or have not had it for a long time it may be a serious disease, killing many, as mentioned in the case of measles. The same is true of other diseases to which people are not accustomed.

Some diseases come to us periodically, but not finding life conditions favorable again disappear. Some diseases are actively combatted and kept down, as mentioned under cholera. There is another disease that flourishes in overcrowded communities where sanitation is neglected that should be mentioned, namely the Plague. This has several times come near getting a foothold in California.

THE PLAGUE. The Plague is a disease par excellence that flourishes with overcrowding and neglect of sanitation. An extract from Woodruff's "Expansion of Races" shows how the scientific student of diseases looks upon some diseases. It emphasizes the importance of cleanliness and prevention of overcrowding, not only of cities but of the country as a whole.

"PLAGUE AND DIRT."

"The plague of India is a direct result of overcrowding of indescribably filthy people. In Calcutta, as many as 144,000 live in one square mile (London has 36,000 per square mile), 250 living where there are accommodations for only fifty, or less; huts seven feet square accommodate five or more. The germ has such ideal conditions for spreading from rats that it can not be eradicated. The native is so dirty in his habits that . . . the British have finally given up all hope of forcing sanitation upon the Hindu. Even when the reported deaths of plague amounted to nearly 30,000 a week, they were forced to allow the native to contract the disease. The strange new methods of cleanliness were repugnant to him and often ran counter to his religion.

"According to a writer in L'Illustration (Paris), it is now generally admitted that there is overpopulation in India, and that the present mortality from plague is a beneficial blood-letting. The deaths in 1906 were so numerous that the Government stopped reporting them. In 1901 the number of victims was 275,000; in 1902, 580,000; in 1903, 850,000; in 1904, 1,025,000—and the estimate for 1905 was over 2,000,000, and 1907 totaled even more." (p. 69.)

We are further told about its repeated ravages in Europe, how at times it may have killed off one-quarter of the entire population, and how by the eighteenth century Europe had arrived at a stage of cleanliness where its ravages became less and less.

". . . . Plague is really a disease of rats transmitted by fleas, and these ancient epidemics show bad sanitation of crowds, for rats never flourish except in such conditions." (p. 70.)

In the light of such descriptions comments on the ravages of our specific diseases seem tame, but we do have some diseases that are almost as fatal as the plague of India. We need only think of Tuberculosis, a disease that flourishes among the poor living under crowded and underfed conditions, but unfortunately on account of the spitting habit it also finds victims among people who live under different life conditions.

TUBERCULOSIS. Tuberculosis is a disease that has long afflicted Europeans and their descendants and for ages has been killing off the susceptible, until now the average individual is fairly immune, unless conditions are very bad. It is severe in families where there was no constant exposure and where weeding out has not been going on. It is of course more active under crowded, congested conditions than in the open country, not only on account of constant exposure but also on account of the weakening of the body under general unsanitary conditions. If people lived under good air conditions, tuberculosis would be a rare disease, afflicting only those who are especially sensitive, and perhaps largely maintain itself by attacking the feeble. Tuberculosis pure and simple in an individual living under good air conditions has few symptoms, so few that the disease in its early stages may escape recognition. A case that is well developed can be diagnosed by almost any one. In proportion as individuals live under bad air there are many symptoms. It is an old disease, well described by the ancient Greeks.

Tuberculosis or Consumption like many weeds has come to us from the old world and like them does not thrive in clean communities. Just as neglected farms and waste places are the natural homes for weeds, from whence the seed are spread, so neglected communities and the slums of cities are natural homes of tuberculosis. There is a State law that compels the cutting of weeds, largely neglected however except by the railways, but we are only beginning to realize that the breeding places for consumption must also be cleaned up. Tuberculosis is a disease that has gained such a foothold among us that its presence is taken as a

matter of course; we are scarcely alarmed when a neighbor next door dies, while a case of leprosy or cholera in an adjoining county or state alarms many.

What must we do to get rid of tuberculosis? There are two general lines of procedure. First, to clean up, to make the conditions for the existence of tuberculosis unfavorable, to clean up slums and communities and buildings generally, and give the people good air. Consumption can be banished, just as malaria has been banished and as typhoid fever in large cities has been banished. The afflicted should be sent out where they can get good air; if not too far advanced they are apt to recover. Tuberculosis is really a protest against bad air conditions, just as typhoid fever is a protest against bad water. Looked at evolutionally, one would be inclined to say that it serves a community right to have consumption and typhoid fever and malaria. The people themselves are to blame and nature is weeding out among them as she has in times past.

A second method of getting rid of Tuberculosis is by the use of antitoxins. This is a subject of exceeding interest to the scientific physician, but unfortunately he only too often neglects the simpler method, cleaning up. Tuberculosis is important to the student of ill health, he must constantly rule out its presence in dust victims, many of whom end through the ravages of the tubercle bacillus, and, as already mentioned, more particularly those who have a low blood pressure. Old densely crowded countries with exhausted soils must constantly contend with starvation; underfed people are numerous. Today in our country conditions are gradually reaching a similar stage and the weeding out through tuberculosis will go on for a long time.

DIPHTHERIA. This may be cited as an example of the anti-toxin treatment of specific diseases, both in preventing and curing the disease through the use of its own poison, its anti-toxin, just as smallpox may be cited as a disease preventable (but scarcely curable unless resorted to very promptly) by the use of vaccination.

¹ Cass Report. One of my earliest patients was a young farmer whose ancestors were rura Europeans. Under bad air conditions the man became afflicted. There was present cough, fever, free expectoration (full of tubercle bacilli) and night sweating, not to speak of other symptoms. He was promptly advised regarding the influence of "bad air" and the importance of remaining in good air. His symptoms gradually subsided and tubercle bacilli disappeared in the course of months. For two years he apparently was well. Then there was another infection; this too subsided in a year or two. He was now more careful. He remained in apparently good health for several years until one day in midwinter he had some business at the court-house of his county-seat. That meant to be exposed to bad air all day. He reacted very promptly; there was a marked "cold," followed by a catarrh, which "hung on." When he returned he had symptoms of tuberculosis. On examining the sputum tubercle bacilli were found, this settled the diagnosis. The infection this time was so severe that he did not recover. While the active tubercular process was going on, he came to recognise clearly that symptoms were dependent on exposure to bad air, and needless to say, he was very careful not to expose himself, but of course it is almost impossible wholly to avoid doing so. Such a case shows the marked difference between country and city cases, the latter often being harassed by a variety of symptoms.

TYPHOID FEVER. This is another disease that was early brought to our country. It is closely related to typhus fever with which it was long confused. Recently another related disease was separated, paratyphoid fever. Thus finer and finer distinctions are being made. What seemed to be cases of the same disease may be found to be something entirely different. The treatment of different diseases may of course differ radically.

Typhoid fever is essentially a water-born disease. The active cause gets into streams and into wells; it is also carried by flies, as in the case of cholera. It took cities a long time to learn that typhoid fever can be prevented by the use of pure water. Many cities have gone to great expense to get good water from a distance or else resort to filtration on a large scale. This is a matter where the community as a whole must take hold; the individual is practically powerless. Household filters are worse than useless. Typhoid fever is more common in small towns than in large cities. Many a vacationist on returning to the city brings back typhoid fever. The prudent man is more and more making inquiries before starting on his vacation; he knows that many diseases are preventable; he will not willingly or knowingly go to a malarial country or to a region where yellow fever or cholera occurs, nor will he go to a community where typhoid fever prevails.

Just now we hear more or less of vaccination against typhoid fever, the special scourge of soldiers in camp. Under changing camp life, it is simpler to vaccinate than to take constant precautions in getting water free from typhoid germs, but such an argument does not apply to people of the city; there people are fixed to their homes and not constantly moving about and there water furnished should be pure. The importance of a pure water supply is well known. Backward communities are still too common.

Typhoid fever is a disease due to a definite micro-organism, or germ, with a variable number of symptoms. The textbooks mention a large list but it should be kept in mind that the textbooks as a rule are written by city men, based on city cases, especially on city hospital cases, and that means in turn people who live under bad air conditions. The mortality rate in cities and in city hospitals is high. In the country the disease generally runs a mild course and in spite of poor nursing and improper food patients tend to get well. Under good air many of the accompany-

¹ The following from my paper on Atypical Cases and Dust Infection (American Medicine, Oct. 1, 1904) may be pertinent:

In some cases the inhalation of dust simply acts as a modifier of the symptoms of disease. The behavior of a typhoid fever case in a city with a dusty atmosphere differs from that of one in the country with a pure air—the constant slight efforts of coughing and clearing the throat may be wholly absent in the latter case, and respiratory diseases, like bronchitis, laryngitis, pneumonia, pleurisy, absentiated in the latter case, are less apt to carry the patient off. Indeed, it would seem that among the first things to do in the treatment of typhoid fever (as well as of other exhausting diseases) would be to place the patient in a good atmosphere.

ing symptoms are wholly absent and the country doctor is often in doubt whether he is really dealing with typhoid fever. It is only within recent years that a test has been devised that will enable him to determine definitely. The test is made by the use of a few drops of blood.

An observant old country doctor located in a small village surrounded by intelligent farmers told me he has less and less to do each year with "filth diseases" and ill health depending on unsanitary surroundings. His explanation was simple: The people are learning to clean up generally. Many get "Farmer's Bulletins" of all kinds in which they are told how to take care of their animals, not to speak of crops; they have learned that it pays to look after things—and they apply the knowledge to themselves. What is good for beast is also good for man.

PNEUMONIA. Lobar pneumonia or "real pneumonia" is popularly reccognized as a disease that usually follows a "cold;" professionally it is considered a disease that seeks out robust men; it has been designated as the Captain of Death. In some cities it outranks all other causes of death; it is widely prevalent during the closed door season.

The popular belief that pneumonia follows a cold is frequently mentioned by the patent medicine men. "Beware of a cold," they say—and at the same time they advise taking their nostrums "to cure a cold and prevent pneumonia."

Pneumonia is a rare disease under good air conditions and is readily "amenable to treatment," with a low death rate. Some country doctors say they have little difficulty in successfully treating their cases and in shortening the disease, which the city doctors deny. If we consider the difference in environment one may see why there are such divergent views.

Pneumonia does not occur in a new country until it is introduced, no more than other "germ diseases." The "pneumococcus" is a very minute plant, a bacterium, that can be grown artificially in test tubes, just as large plants can be grown in the greenhouse or in the garden. Introduced diseases like introduced plants thrive only if the conditions are favorable; if not they perish.

Pneumonia flourishes where people are massed under bad air, one may speak of hotbeds of disease. We may say that the prevalence of pneumonia is a good index of unsanitary air conditions, just as typhoid fever is an index of unsanitary water.

In this volume the writer is telling about things "here at home." It is not his intention to tell about things in distant countries. One is re-

Our newspapers frequently speak of people being "threatened with typhoid fever," and yet in a day or two they may be about as usual. The question then arises, What really was the matter? According to my experience such "threatened" cases are often acute attacks of dust infection.

² Having twice had this disease myself, once in childhood and once since a physician, I have naturally been inquiring under what conditions it occurs, and that means at the same time how to prevent it. Here again the matter of good air and cleaning up crops out very strongly.

While physician among the insane I was struck by the rarity of pneumonia among the hospital inmates. The reason is simple: great cleanliness and an abundance of good air day and night.

minded of Samuel Johnson: "Nay don't give us India. That puts me in mind of Montesquieu, who is really a fellow of genius too in many respects; whenever he wants to support a strange opinion, he quotes you the practice of Japan, or of some other distant country, of which he knows nothing." But the following clipping from a newspaper article of several years ago relates to our own country. It shows how pneumonia was brought to a previously "healthy country" and how on account of favorable conditions it readily increased and found many victims. The lack of an abundance of water to clean up properly is an important factor. The closing paragraph is very suggestive; the conditions under which men sleep tell the story. If those men had clean tents to live in the mortality rate would quickly subside.

DEATH IS SUDDEN: WEALTH IS QUICK.

Pneumonia Becomes the Scourage of the Nevada Gold Hunters.

DEATHS EIGHTY A MONTH.

Goldfield the Gathering Place of Thousands of Adventurers.

GOLDFIELD, NEV., January 5.—There's a terrible little fellow who seems to have been appointed by the spirits of the desert to keep ward and watch over the golden treasure buried in the barren hills of bleak Nevada. He is the Pneumococcus. The treasure hunters are slowly besting him, but the little demon is exacting a heavy payment for the gold they take away.

Pneumonia is the scourge of Goldfield. Deaths in the mining camp run from 60 to 100 a month. Call it an average of 80 and you have a yearly death rate of 6 per cent. A very large majority of these deaths are due to pneumonia, a few to typhoid.

The outside world hears little of it save when some well-known man passes away, such as ex-Governor Hunt of Idaho, who succumbed here to the scourge of the camp. Most of the victims are homeless and friendless adventurers. No fuss is made over them. They are simply taken out and buried in the most God-forsaken cemetery in all the world.

In most of the victims life goes out like a snuffed candle. So swiftly death rides on the wings of Pneumococcus that they call it black pneumonia down here. But it's only old-fashioned pneumonia working the more swiftly that it has such fertile soil in which to plant its seed. It is intensive farming, Death the farmer.

The hardships of this coalless, overcrowded mining camp weaken constitutions so that when disease comes it meets little resistance. In four saloons late last night a correspondent counted sixty-eight men asleep

on the floor. Some were drunk and some were merely exhausted with toil and had no other place where they could sleep.

Out of the kindness of their hearts the bartenders let them sleep where they lay. Occasionally a man with a mop would approach one of the sleepers and poke him into semi-wakefulness.

"Hey, Bill," he would say, "roll over till I mop beneath ye."

The sleeper would obey orders, returning to slumber the next instant, while the mop continued its work under the next man and the whirr of the roulette ball, the popping of many corks and the volleys of profanity in many tongues blended for the slumberer's lullaby. It is men of this sort that are dying like sheep in Goldfield. They are shipping two or three of them out on every train, others they bury in nameless graves; the hospital is full and the undertaker cheerful.

The newcomer wonders why there is a graveyard so near the middle of the town. This the story of how it happened, related by one of the oldest inhabitants of the Goldfield settlement:

"When I first blew in here nobody had ever cashed in. A few days later some fellow croaked. He'd no money, no friends, no name that anybody knew of.

"So a few of us thought it was up to us to plant him. I was on the committee to pick out a cemetery site. We found a place out on the desert about a mile from town. Then we gave a man \$5 to dig the grave.

"Jake Murnan was the fellow we picked for the job. Jake was drunk and broke. He hated to let his jag die, so a fivespot looked big to him.

"I took him out and showed him the place and Jake came back to get a shovel and a pick. On the way back he comes on a hole, six by eight feet, that some prospector had made and, being some tired, he figures that this is just as sightly a place for a grave as the one we picked out. So he digs it right there in that prospector's excavation.

"When we come to bury the stranger we sees Jake has made a break, but we was too busy to bother about it. So we plants him right there.

"Course, the next one was put right next to him, and so it grew up into a fine young cemetery. Pretty soon we gets 200 bodies planted there:

"So we calls a halt and starts another cemetery further out. But Jake is responsible for the first one."

GOLDFIELD IS INDIFFERENT.

But it's little Goldfield cares for the man who falls. They are rushing in every day to take his place. There's gold out there in the desert and the lucky ones will get it. If you live, you live; if you die, you die, says fatalistic Goldfield.

If a man were to recount all the tales he hears down hear of men who go to bed paupers and wake up worth tens of thousands he would be set down as the possessor of a singularly active imagination. But a great many of these yarns are true and capable of demonstration. For example:

[Next comes a column of such examples, of men who quickly became rich and some who again quickly became poor. The article closes as follows:]

Society Note: The many friends of Tex Rickard will be interested to hear that he intends having his Northern saloon swept out next week.—

Indianapolis Star, January 6, 1907.

SYPHILIS, or the Pox, was until recently rarely mentioned in polite literature or referred to vaguely as "blood poisoning." It is a disease that is transmitted almost exclusively through contact, the parasites travelling from one individual to another, especially through abraded mucous membranes—the abolition of the common drinking cup aims to avoid infection through lips and mouth.

This disease formerly ravaged fearfully and still does, but today "it kills only poor people who are friendless"—it is considered a disgrace to die from it. Often it is innocently contracted, especially by children.

Those who see few cases underestimate and those who see many overestimate the prevalence of this disease. In the practice of the family doctor, particularly in small communities, there is a complicating factor—patients conceal the presence of the disease and go elsewhere to be treated, perhaps to a quack who loudly advertises his ability to cure "blood poison" in a short time.

Syphilis is one of the diseases that needs the widest publicity but which up to date has received anything but that.

Another disease that should be mentioned is gonorrhea. To what extent does it prevail? According to some physicians it is not at all common, according to others it is very common. Why this discrepancy of opinion? Here is the explanation of one of our observing physicians:

The country doctor, unlike the city doctor, does not write about his cases—he talks about them. Many people know he talks and when they have certain unmentionable diseases do not go to him but go to the city doctor. Some of the latter specialize or at least give special attention to such cases, "they do not give their patients away." Because the city doctor gets many such cases he is inclined to believe the world is full of the disease—just as the country doctor who sees few cases has an opposite opinion. This being so, the truth lies somewhere between extremes.

There is no need to run over a larger list of specific diseases, many of which are dependent on the neglect of cleanliness, we need only think of lousiness and the itch and many skin diseases that are transmitted among neglected children, or of diseases among domestic animals due to neglect and transmissible to man, such as worms of many kinds, including tapeworms and trichina. In some instances the cause is so large that any one can see it, in others so minute that only the highest power of the microscope reveals it. High school courses in elementary biology and bac-

teriology and sanitation can not be too common, and the importance of the influence of environment and of cleanliness can not be over-emphasized.

Diseases in the average civilized community are transmitted mainly through air, through contact, through food, through insects and through water. Air should be mentioned first, for we breathe it every minute of our lives. Cities, as already mentioned, aim to get good water supplies, likewise good food; there are all sorts of laws and ordinances covering the matter of good and bad food. As to insects we know that many common household pests are absent from clean homes. When Mrs. Carlyle removed to London the first thing she did was to look for bedbugs. Today we have advanced so far that we "swat the fly" and other common household pests. Some insects like some weeds flourish only in neglected homes and communities.

Although in recent years the importance of good air, both in preventing and curing consumption, has become well known, yet the role of bad air in common affections is scarcely realized. Catarrh, dyspepsia, and nervous prostration flourish in communities where air conditions are neglected. These affections, one can not speak of them as definite diseases, flourish like common weeds. They are readily eradicable by a combined effort.

When a new country is first settled the old weeds of civilization are absent; they come in gradually. When the Kankakee swamps were drained and crops planted, farming was easy the first year; there were no weeds to contend with, but in a year or two they began to come in and after a few years they were so common that farming now is mainly a battle against weeds. It requires a combined effort among farmers to keep them at a minimum. The rented farm, like the rented home, is apt to fall into neglect; it will ripen seed enough to infest or infect the whole country around. In crowded tenements life is a constant battling against ill health and sickness and disease. One scarcely realizes to what extent poverty itself is dependent on chronic ill health.

WEEDS AND DISEASES.

The analogy of the introduction and spread of weeds and of diseases is very interesting to me, because long before I became a physician I had become interested in the appearance of new weeds. I have kept track of new arrivals, particularly along rivers and railways and in waste places. New plants are brought in in various ways. In order to know what is new one of course must know what is old. In time I found plants that had not been reported by others; such are said to be "new to the State." The botanist

usually gathers plants while travelling, and then he begins to realize that many of the weeds of other countries are likely to appear in his own home. I have seen many weeds appear in this State that are foreigners, they are just as foreign as the White Man or Negro or Chinese, as foreign as the specific diseases just mentioned, but many soon become thoroughly acclimated or naturalized.¹

When I became a physician I had a very natural desire to have a specimen of every disease found in the State, the "specimen" to consist either of a bit of tissue or the active cause (a microbe or parasite of some kind), a photograph or merely "notes on cases," in other words case reports. In the course of time I found a few diseases that had not been reported previously, they were new to the State.

The student of natural history and especially of botany soon learns that species vary, that there are no sharp dividing lines. The student of medicine too soon learns that there are no hard and fast lines in the case of many diseases and particularly in conditions of ill health.

When I first began to botanize I asked friends who went away to send or bring me plants; many promised but few did so, and then often it was just a flower and not a "specimen" such as a botanist would collect. One may be wholly unable to identify an imperfect specimen. One soon avoids asking friends to collect unless they happen to be experienced, and that is also true of "case reports."

¹ A botanist may go miles out of his way in order to study a new weed, and after properly identifying it he may make an effort to destroy a patch; but after a plant has become common he scarcely notices it and any effort to eradicate it would prove futile. The task of ridding a locality of weeds belongs to the community, a fact recognised by our State laws, which require the annual cutting of weeds.

The physician interested in the advent of new diseases may likewise make great efforts to study the first cases but after a disease becomes common he may become indifferent. Disease eradication must also be done by the community.

IX.

BIOGRAPHY AND ILL HEALTH.

While in college I was in a class in Evolution. One term we read the Life and Letters of Charles Darwin, which had just appeared. I had already decided to become a physician and naturally I noticed references to ill health. There were many references, and I wondered what it all meant. But the subject of ill health is not a college study and nothing was said about it in class. That was really the first time I noticed how the subject of ill health crops out in biographies and in letters.

A few years later while physician in a hospital for insane I became interested in letters written by the insane. I encouraged patients to write, indeed I aimed to get a specimen of the writing of every patient (several hundred) under my care. Those who had no friends I encouraged to write to me; a few wrote regularly every Sunday. In the course of years I accumulated a collection of hundreds of letters. I tried to get autobiographies, but with few exceptions failed. The reason is simple: Men who are sent to state institutions are not likely to be writers. But I did obtain several. One was long enough to make a fair sized book. The man was a fluent writer and his frankness reminded one of old time biographies; he spoke about his life as sane men nowadays are not apt to speak.

Since I have made a special study of ill health, particularly of old chronics, I have been interested in getting biographies and in comparing such accounts with printed biographies of people who have had much ill health, as in the case of Darwin just referred to. To what extent can one compare and draw conclusions? To what extent can one interpret the "Lives" of the dead by the lives of the living? Again, to what extent can the living profit by the

"Lives" of the dead? In all probability the best students of the biographies of people who had much ill health are people who themselves have ill health.

AUTOBIOGRAPHIES. A number of my patients have given me autobiographical accounts, but it should be kept in mind that in a small community there are few people who are writers or who lead eventful lives and one may hesitate to cite them at all.

In a general way it may be said that patients can be divided into two groups, those who work with their hands and those who work with their brains. Now poor people as a rule work as long as they possibly can, until actually disabled by disease. They have no time to rest, to give nature a chance to correct the impending difficulty. They may not even listen to advice regarding proper food, proper housing and proper ventilation. Many are as willing to take medicine as they are unwilling, because unable, to follow good advice. Some take medicine from anybody, including the patent medicine men. In contrast to this class are those who in the old world are known as the "better class," but with us there are no sharp lines.

It is not difficult to get data regarding the influence of bad air, they are mainly of the simple annals of the poor. But it is difficult to get continuous data regarding the influence of good air. If a physician insists on his good air advice being followed some men will change doctors rather than their occupation. That means few pure air biographies of men.

On the other hand are the women. Those living in the suburbs may not be compelled to go down town daily and expose themselves to bad air. They are better able to live up to good air advice. For this reason most of my autobiographies and biographies are from women, a fact which the reader may have noticed from case reports already cited.

Today I am inclined to ask every new applicant for a brief autobiography, one saves much time thereby. Moreover the applicant for professional services is enabled to collect his thoughts and to present them systematically and to the point. One soon finds that some long-winded patients are not worth while but the very fact that an individual is willing to write out such an account makes him worth while.

When I wrote my paper on Dust, A Neglected Factor in Ill Health I included one case report which was autobiographic, as follows:

Case of Mr. C., as written by himself, May 16, 1904:

"Age at this writing, 24 years.

"Family: All long-lived—no tuberculosis as far as can be traced. Mother and mother's family both subject to colds and nose, throat and stomach troubles. Mother always extremely nervous and exhausted after such attacks. This condition also occurs in subject.

"First appearance of complaint: Up to about five years of age no inflammations or cold troubles of any kind. Then a great susceptibility, always beginning in respiratory organs and canal, and ending in disturbed stomach—and muscular exhaustion. End in prolonged cough.

"Conditions when in school and the vacation periods: Up to the time of starting to school no evidence of these symptoms; after that colds very frequent—growing less frequent and ceasing during summer months of vacation. Several vacations spent in country, where no disturbances occurred. Recurrence of disturbances upon continuing school sessions.

"At 18 years leaves school. Office work: At 18 leaves school and takes office position. At first this position was not confining and allowed of one-half time in open air, during which time no great disturbances occurred. Then work became more confining and finally inside exclusively. Cold conditions became aggravated immediately. After about two years of this work subject was compelled to quit work entirely for over eighteen months, during which subject suffered from continued colds, excessive nervousness and general weakness. This condition was owing partly to confinement and partly to overwork. About three months of the last part of this eighteen months of enforced idleness were passed in the country. Those three months were more beneficial than anything else toward improving condition.

"Occupation since 18: Both indoor clerical work and outside work—no manual work. Habits sedentary, body sluggish. General condition pretty good until increased application to inside work—then condition became worse. Overwork and confinement to quarters in which practically no ventilation was possible finally produced same condition as before—continued and frequent colds, followed by stomach disorders and nervous exhaustion.

OBSERVATIONS.

- "1. Office in which subject was occupied (was) below level ground, with no facilities for ventilation; consequently dust and spittle deposited or blown into the room was held, and the air was never more than a slight per cent. pure. Whenever subject's work confined him to this place condition became rapidly worse.
- "2. Dust: It was observed that on clear, sunny days condition very much improved, but two or three days of dusty weather again produced first nose and throat and bronchial irritations, and then stomach disorder, accompanying or following the cold condition; that disorder followed on exposure to blowing dust or indoor confinement with impure air. When at home subject experienced no such disagreeable sensations as in the down-town districts and districts where impure air was the irritant.
- "3. Railway trains: Two very severe colds can be traced directly to confinement for three hours or less in railway coach—in both cases all windows were closed and cars full of people—some of whom spat upon the floor frequently.
- "4. It has been observed that overheating in impure air will always produce cold condition.
- "5. Conditions always worse after attending public gatherings, meetings, etc., especially where the majority of the people assembled are men. At one political meeting especially, where expectoration was unusually frequent, inflammation began before subject even left the room.
- "6. Subject was formerly told by physicians that the nervous exhaustion was produced *entirely* by overwork, but it has been observed that this nervous condition invariably accompanies a cold or respiratory or alimentary inflammation.
- "7. During the sweeping and after the sweeping in the office where dust has been deposited for some time a condition of cold occurs, but not invariably."

The above notes were copied on the machine just as they were handed in.

I hope some day this man will write a detailed account of his life, especially dwelling on his observations since writing this brief account. He has learned to live within his limitations and to reduce ill health to a minimum.

In this volume when speaking of environmental influences one has largely in mind the average man or average "case" or patient. At either end are extremes. That environmental influences or causes that produce symptoms, ill health or disease, should manifest themselves differently in the "idle rich" and again differently in those who are desperately poor, must be self-evident. And that the very active brain worker should have symptoms scarcely known to the dull witted manual laborer must also be evident.

Physical vs. Mental Life. In general it may be said that the individual leads two kinds of lives, a physical and a mental; in some one, in some the other predominates. Some people have such a desperate struggle to make a living that they have little time to think. Such lives would naturally form dull biographies.

Everybody of course thinks more or less. Some individuals now and then have a "rush of thoughts." In some the mind is so active that it continues at night in dreams. An interesting question is: Under what conditions is the mind unusually active, or, under what conditions is it not active? Of the individual whose mind is usually active one may ask, Under what conditions is it not active? While of the person whose mind is occasionally very active we may ask, Under what conditions does this occur?

To what extent does environment influence an individual's physical and mental life? I have tried to show in this volume how it influences health and ill health and how one factor stands out. Dust.

CASE REPORTS AT SECOND HAND.

The physician constantly hears of people afflicted with certain diseases or of people in ill health. His patients will tell him of this and of that individual but the data may be so imperfect that he is unable to make a diagnosis. The physician, unlike the botanist, can not go out and collect specimens; he must wait until the "specimen of disease," the afflicted individual applies to him. We say the patient selects the physician, not the physician the patient.

Although one may be inclined to discredit the statements of patients concerning the disease or ill health of others, yet when the ill health is apparently similar one may attach considerable importance to statements. We reason from analogy. If a physician has "old experienced chronics" who are good observers he

may be inclined to accept their statements as true, and yet such case reports are "second hand," and that is what I have been trying to avoid in citing cases. Hence the frequent occurrence of the pronoun I, for I am writing of my own cases.

Many of my "experienced patients" who are well informed on the subject of dust influences will tell me about people whom they have observed, perhaps friends whom they frequently see and whose ill health they will interpret in the light of their own. Old patients often want to send people to me but I may not see my way clear to accept them, or on the other hand the invalid or complaining one may not deem it desirable to come to me.

One of my patients, a middle-aged woman, the wife of a railroader, had been noticing how the air of passenger trains, especially of smoking cars, affects passenger conductors. Now it should be understood that well managed railroad companies are careful how they advance their men. They engage a large number of men for the lower positions and out of them they successively advance those they deem desirable or competent. Men begin as brakemen or firemen and may advance successively to the very highest positions. Now a man, say a young country man, may have good health as long as he is a brakeman on a freight train, he is leading an outdoor life, but he may complain greatly when transferred to a passenger train. The man with constant colds and catarrh and weeping nose and eyes is not apt to be advanced to the position of passenger conductor. On the other hand a passenger conductor may complain greatly of dust infection that does not manifest itself by such symptoms. The disturbance may manifest itself by a deranged alimentary tract and since this may present no visible signs the company retains the man, may even advance him. man with dyspepsia may be able to do the work of a passenger conductor but when he is advanced to a still higher position where the work is largely mental he may complain of nervous symptoms. He may suffer from what is called nervous prostration. In the lower positions it is easy to supply a substitute when a man is disabled but with the higher positions this may be difficult, so a man may fall back into a lower position. It is only the survival of the fittest who are able to and do fill the higher positions.

Now my old patient at first had had much ill health and consultations were taken up with a discussion of her own conditions and symptoms, but in time as there was less complaint there was developed a habit of discussing her friends. She was loval to her friends and she would talk over some that she wanted to come to me. Some I saw my way clear to accept. At one time her lovalty to a friend was greater than to me and she brought the woman and I had to prescribe and advise whether I wanted to or not. At another time she was very anxious that I accept as a patient a man who had recently been promoted to be a passenger conductor, for years he had been a freight conductor. Immediately he began to complain. Evidently he was wholly unadapted to air conditions found on small passenger trains where the spitter is so conspicuous. I told her I was willing to accept him as a patient, but when the man himself found that I would likely advise a "change of occupation," as going back to the outdoor life of the freight train, he concluded not to come. He had been waiting for years and years for this promotion and the idea of relinquishing it was not to be thought of. Instead he would try some other physician, one who would attempt to cure by the use of medicine alone.

Now I never saw this man and yet I could give quite a full history from data obtained through my patient, in weekly or monthly installments. We were both interested in the man. The story as I obtained it from my patient was to me like studying an individual through his biography. The man finally died. I feel confident that had he lived up to good air advice he might have lived on indefinitely instead of dying prematurely and leaving a family of immature children. Cases like that are tragedies.

Although my patient was above the average in intelligence and was a good observer, yet she was not much of a reader. I tried to interest her in reading biographies of people who had ill health. My reasons were not wholly altruistic, although she would profit

by such reading I myself would profit by getting the references to ill health.

One of my well-informed patients was travelling on an interurban car. At a small town two men took seats directly behind her and from remarks about the weather and generalities soon began to talk about health matters. One man evidently was a well-to-do farmer and the other was a county surveyor, judging by the conversation they had about road improvements. The farmer complimented the surveyor on his success in getting good roads built; the surveyor attributed this to the fact that he was always ready to talk with people, even spending evenings at his office at the court house. He tried to bring men who opposed each other together to exchange views, making his office a meeting, or shall one say a loafing? place. From discussion about roads and weather, they talked of their health and then the surveyor's voice had a still more doleful sound to my patient; he complained greatly; said he could not understand why he runs down at the beginning of every year, that during the last few years he ran down worse than ever. My patient gathered from the tone of his voice even more than from his words that the man was much "run down" and after telling of the remedies and doctors he had tried, it was evident that he was very much discouraged. The farmer suggested that he accompany him to California, that he was going merely to spend the winter. The surveyor wished he could, he feared he might later on be compelled to. For the last few years February and March had been his worst months; he felt that if he could hold out during these months he would get along again, but he was starting in so early this year with his aches and pains, nothing much the matter but "just have no appetite and don't feel like bestirring myself;" he feared he would not hold out. He told how well he felt during the summer when out looking after the construction of roads, spending little time in the court house.

My patient "understood the case at once," too much confinement about the court house and too much inhalation of court house

air! She almost felt it her duty to turn around and speak to the man, but yet that was not proper, she did not know him at all, and besides she knew she could not make herself understood; some things can not be explained briefly. When the men were leaving the car, she did turn around to get a good look at the sick man; he was anemic, very pale and languid. My patient said if my book had been out she would have told the man of it, that it would give him the explanation of his ill health—I am just vain enough to think that this book will fulfill my patient's expectations.

Cases or "histories of ill health" of course occur in infinite variety. It is hoped that in this volume a sufficient number and variety of cases have been cited to direct the reader's attention to a neglected factor in ill health and that he will find at least one case that approximates his own, enabling him to make a comparative study.

The reader should keep in mind that my cases are "selected cases." They are picked out from a large number. There may be other factors operative but here I have emphasized only one, the factor that is commonly neglected. The reader who wants case reports that are written impartially, with no theory to uphold, might be referred to the biographies of people who had much ill health, where references are incidental.

During the last few years I have been reading many biographies of people who had more or less chronic ill health, mainly to determine to what extent air conditions or dust influences crop out. One frequently gets on the wrong track and may do a lot of reading only to find in the end that there is nothing in it. Some biographies contain so little mention of ill health that one almost thinks a mention of it was not worth while, if not a disgrace. There may be so few references to the matter of health and ill health that a biography is not worth while to the student of ill health. On the other hand there may be many references. Where there are several volumes (as in the case of Darwin) one must read carefully not to miss any. Then again often little things are mentioned that

at first sight seem to have no relationship to ill health but which may really be of importance.

Now individuals who have or had much ill health are apt to be better readers or students of biographies of people who had much ill health than those who are in robust health, and it may become highly profitable to the physician to interest them and to discuss details. The physician in the small community where there are few literary people, not to mention poor library facilities, greatly appreciates such assistance.

Another interesting topic is to get the details of individuals who report themselves cured by outlandish modes in weekly or monthly journals. Some cases as they stand are reflections on, if not an indictment of, the medical profession, and yet when one gets details it may be anything but that. For instance, a retired preacher in bad health after trying the doctors and trying sanatorium treatment in vain adopted the faith cure, he was cured by faith, so he said, in a letter to a religious weekly. It was not difficult to get details and then I found the following conditions:

The old man had been living in a large city; he had been complaining more or less and finally was forced to give up. Physicians did not help him much and so when feeling unusually bad, in midwinter, he went to a large sanatorium, that meant to be still confined indoors. Then at "darkest before dawn" he decided to take up a faith cure, not by changing his religion but by relying on its power to cure the sick. He went back to his old country home, a very clean little town on the high banks of a river, and here under good air conditions he recovered. When I got the details I at once saw that it was not a faith cure at all, it was a nature cure. One can predict what will happen when such a man goes back into his old environment; the student of ill health thinks of subsequent events.

Every now and then some patient calls my attention to such "case reports." Substituting the name of some drug or "new

remedy." for imponderable faith or prayer, one sees similar case reports in medical journals; dust influences may readily be read between the lines. But the individual, the patient, who was cured by change of place or by change in time may relapse. The man who is cured by going to a small town may relapse on going back to the city; the man who was cured by a new remedy in the spring may relapse on the return of the closed door season. After studying a number of cases I came to the conclusion that "Odd as such an expression may sound, I am almost tempted to say that I could take the same patients and 'make them sick' on the exploited remedy—simply by beginning treatment in the summer and ending in the winter months." (A Study of Reprints and Clinical Reports on Proprietary Medicines. Amer. Med. June 10, 1905.)

BIOGRAPHY AND THE INFLUENCE OF ENVIRONMENT.

As just mentioned there are many references to ill health in the Life and Letters of Charles Darwin. To what extent can we interpret the nature of a man's ill health from his biography in the light of living people who seem to have similar ill health? On the other hand, to what extent can the living profit by the "Lives" of the dead? This is a subject that I have brought up several times before learned societies. The subject is a large one and I can only refer to it here very briefly.

Biographies differ greatly according to the sort of life a man led, whether eventful or not. Uneventful lives furnish dull biographies. The fact that a man was a statesman, a literary man, a soldier, a musician or a scientist naturally colors the biography. Then the abilities and limitations of the man who writes the biography must be considered. As a rule the biographer's vocation is similar to that of the individual about whom he writes. The Life of a musician is most apt to be written by a man who is a musician or has a good knowledge of music; the Life of the soldier by a military man. The Life of a scientist, a life of interest perhaps to only a scientist, is apt to be written by a scientist; the same may be said of a medical man. One expects the Life of a literary man to be written by a literary man and contain much book-chat.

Now everybody is likely to have more or less ill health and sickness. Some escape in youth, to suffer much toward the end. To what extent these things are mentioned in biographies is an interesting question. Some biographies have practically no mention; others are full of references to ill health. A biographer who has robust health may wholly fail to make mention of ill health, while on the other hand the biographer who himself has more or less ill health may make frequent mention. (Practically speaking, there are no biographies that deal with a man's ill health as books now

¹ The Chronic Ill Health of Darwin, Huxley, Spencer, and George Eliot, Indiana Academy of Science, 1905.

Benjamin Franklin's Observations on Colds and Ill Health, Cass County (Ind.) Medical Society, 1906.

Biography and the Influence of Environment, Indiana Academy of Science, 1908.

The Chronic III Health of Charles Darwin, Amer. Ass'n Advet. Science, Boston, 1909.

Charles Dickens and Sanitation. Cass Co. (Ind.) Med. So. Feb., 1912.

deal with his statesmanship, military exploits, his books, his contributions to science, etc. At least I know of none; I am speaking of ill health dependent on the influence of environment. It must be evident that a "medical biography" which brings in a mass of facts relating to some definite disease may not be of great value to the student of common ill health, particularly if the writer is biased.)

The student of dust influences must of course constantly keep in mind the occupation of the individual about whom he is reading and the environment under which he lived. We all have an idea under what conditions a statesman spends his life and all have an idea of the surroundings of the literary man. But merely to say that an individual is a statesman or a literary man is not sufficient. We must, for instance, sharply distinguish between poets and novelists and historians. All may be regarded as "bookworms," men who consult books more or less freely. The historian must dig out his data from old dusty and musty tomes. He may or must visit the country and the scenes he is about to describe, but the life out of doors is apt to be short compared to the time spent in dusty libraries. A novelist may spin a story offhand, a problem novelist may have to read much, or he may spend much time among people getting firsthand information; after getting his data he may go into seclusion to write. In general similar remarks apply to the poet. A poet like Milton, whose works are full of classical allusions, must have read much; on the other hand, Wordsworth's writings are about things he saw in the country: We speak of certain poets as city poets, they describe crowded streets; others as poets of the country, they tell of the simple life, of the open sky and fresh air. Offhand one would be inclined to assume that the latter are long-lived.

Indiana Biographies. There are few Indianians whose lives have been written up in detail and references to ill health are mainly incidental. Where there was much ill health some mention can not be avoided. It is to be hoped that some one who has access to data will write a biography taking up in detail the ill

health, say of Governor O. P. Morton. There is already an excellent general biography but there are not enough details to enable the student of ill health to arrive at satisfactory conclusions.

Governor Morton was a country boy who on going to the city held out very well at first but in time symptoms of ill health appeared. He spent much time in the State House; gradually symptoms ascribable to environmental influences began to appear. Moreover making political speeches in crowded halls where spitters abound is a hazardous occupation. There is mention that "his father was a paralytic in his latter years and an aunt had been similarly stricken." When Governor Morton became paralyzed in the lower extremities he believed his hour had come. Evidently he had a high blood pressure. His physicians prescribed absolute rest, but as soon as he had partially recovered he was back at work. Evidences of the paralysis remained and finally he went to Paris to consult a famous specialist, but he apparently got more benefit from the rest and the outing (he returned by way of Switzerland) than from the medical treatment, a mode of treatment that is now considered barbarous.

After being governor he became a senator and that again meant indoor life in crowds. At times of an election he made public speeches. There were ups and downs. One can clearly see how a prolonged rest benefited him and how severe exposure to bad air aggravated. He died, evidently on account of a high blood pressure, still comparatively young.

NEW ENGLAND BIOGRAPHIES. The most popular and generally accessible biography of Americans are those of New England literary people. (Those who question such a statement will naturally ask what sort of library facilities a man has.) In some biographies environmental influences can be traced fairly well. New England biographies moreover have an advantage from the fact that there was more or less visiting and correspondence and one gets many cross references. Thus there may be mention of an acute attack of ill health but no clew regarding antecedents, the clew being found in some other biography. It is interesting to trace out fac-

tors concerned in ill health, but it requires much time and good library facilities or a long purse to buy all biographies—It is not advisable for dust victims to use old library books.

Louise M. Alcort was a story writer more or less dependent on moods. We must make distinctions between getting the plot of a story and the best conditions for writing it. It would be interesting to know why writers are dependent on moods, why they can write well one day or one week and not at all the next, or in one place and not in another. Under what conditions does a writer complain of being unable to write? When a man is unable to work we say he is sick. What shall be said of the literary man unable to work? Shall we say he too is sick, mentally ill?

From the biography of Louisa M. Alcott (Cheney) it appears that she had good health up to the time she became a nurse at Washington, on the outbreak of the Civil War. Here under horribly bad air conditions she was stricken with an acute fever and lost her immunity to bad air. She complained of various symptoms, including at times an inability to write. Periodically she would break down and go to Europe. She would begin to feel better on board ship and felt well while in Europe, but we find her complaining of her old ills as soon as she returned home. City and country exercised an influence. One can clearly see that her ill health was dependent on environmental influences. Naturally she made the rounds of the doctors. At one time she expressed her belief that after having had nine doctors she had found the right one, but there was no cure for her. She died prematurely. A number of my patients have read her biography and all believe she must have been a dust victim.

J. G. Whittier is commonly regarded as a poet although he wrote much prose, especially in his younger days. For years he was connected with newspapers. He was a country boy, not adapted to city life, a fact which he himself soon discovered and then sought isolation. In addition to his other difficulties he had defective vision, a common affliction in dust victims on account of

the nearness of the eyes to the nose and air passages, where infection is constantly passing. Whittier's ill health has been explained as being due to "eyestrain" but we must go further and inquire why eyestrain is so common in certain individuals and under certain surroundings. We may come to the conclusion that eyestrain is one of the penalties of living under unsanitary surroundings.

W. H. Prescott. Prescott was a historian; he had to obtain his data from books, especially from old books and old manuscripts. His ill health began early and throughout his life there was much of it. At times he would suffer severely and then again largely escape, depending on the surroundings or conditions under which he lived.

Here I shall not attempt to go into details. I am merely making general mention in the hope of directing the reader's attention to some biographies that he may read with profit.

ENGLISH BIOGRAPHIES. In general it may be said that English biographies are more satisfactory to the student of ill health than our own, for several reasons: First, English writers as a rule live in London (West End) and frequently visit each other and that means there are many cross references. Second, because Londoners are alive to the question of good air and change of air and change of climate. Now it should be kept in mind that the west end of London is comparatively thinly built up, it has many large parks. The wind usually comes from across Windsor Forest and the open country. The exceptional East Wind brings the smoke and dust from the heart of the city, particularly from the East Side where the poor are densely massed, and then there is apt to be complaint, especially by those who are very susceptible to dust influences. Mrs. Browning, for instance, frequently complained of the East Wind.

MRS. E. B. Browning was country bred and had much ill health while in London but her health at once improved on living under good air conditions in Italy. In warmer countries people live more out of doors than in cold northern ones. Now and then she vis-

ited her old home but would at once complain and usually shorten her visits. She blamed the climate, not knowing what the real factors were and that much of her ill health was preventable and that she could have lived in rural England perhaps just as well as in Italy had she known her limitations. She frequently mentioned the Tramontana while living in Florence. This is a wind coming from the Apennines; it also is an east wind. One would assume that a mountain wind brings health but we should not forget that when it reaches the city it brings the filth of the city on to people who live in the opposite end.

Thomas Carlyle was a country Scotchman living in London. He had life-long ill health. He is commonly regarded as a dyspeptic and hypochondriac, but if we carefully study his biography, including cross references in other biographies, we may arrive at the conclusion that he was a dust victim. The same remarks apply to his wife, who also came from rural Scotland. She realized that although her health was bad in London she had good health on visiting her old home in the country. But in the country she had nobody to talk to. She preferred to live in the city where she met people; she preferred congenial people and poor health to good health in the country but no one to talk to. She was not exceptional. The physician constantly meets people, especially women, who say they would rather be dead than move or remove to the country.

One hardly expects a man of Carlyle's cast of mind to talk about his ailments, and yet his biography and his letters are full of references to his chronic ill health.

GEORGE ELIOT was one of the foremost women writers; her novels are based on a study of human nature. She had frequent discussions with Herbert Spencer, England's foremost philosopher. One might think the subject of common ill health and the detailing of symptoms were beneath her dignity and yet her biography, that is the letters printed in her biography, are full of such references. The explanation is perhaps simple: Many of her letters are to old

friends, people who moved on an entirely different plane. There were few points of contact, but there is one that is almost universal; just as people in health speak of the weather, those in ill health speak of their complaints. Her friends wrote about their ills and she did the same. Her letters give a fair account of her health and her symptoms and of course more or less of conditions under which she lived. Although letters are given in chronological order, yet the data may not be in the same order, for a letter may refer to events of months or even to years ago. Such references should be properly placed. George Eliot's biography is perhaps one of the simplest and most satisfactory to the student of ill health.

CHARLES DARWIN. In the case of George Eliot there is really only one volume of biography, that by her husband. Although there are several other volumes treating of her life and personality, they contain very little information of value to the student of ill health; they can scarcely be considered as supplementary and the general reader can dispense with them. In the case of Darwin there are four volumes, two appeared years after the others. There is of course an immense literature relating to Darwinism. George Eliot's biography is chronological; Darwin's biography on the other hand is largely topical, that is letters relating to certain topics are brought together. To bring all the data in chronological order is quite a task, how large I did not realize until I came to copy out the references to ill health and environmental influences for a paper at the time of his hundredth anniversary. Darwin was a marked dust victim, but, from the fact that he had much ill health while living in the isolated country, his complaints seem rather puzzling, until one considers that he got whole cartloads of old books from the city, and that when too ill to be about he would look them over reclining on a couch; that meant literally to get "filled up on city dust." He mentions abstracting whole series of Transactions of learned societies. He realized that books were dusty and that one gets dirty handling them, indeed he wrote a paper on the importance of having cut edges and gilt tops. But that his ill health was dependent on dust influences he did not at

all realize. His life history is a very interesting one to the student of chronic ill health.

Darwin had much faith in hydropathy and frequently went to a water cure establishment. With all his knowledge about animate nature he evidently did not properly understand the relationship of cause and effect, he did not study nor understand the factors that produce ill health or restore health. Scientists as a rule have a great knowledge along certain lines only, along others they may possess the knowledge of the average man or that which they have perhaps imbibed at home from ignorant parents. But in the case of Darwin we should not forget that he was the son and grandson of physicians, and that his knowledge regarding matters relating to health and ill health and disease was far above the average. Indeed, he went to medical college for a time; his father wanted him to be a physician, but the practice of medicine had little attraction for him, as for many another man of a scientific cast of mind, Huxley, for instance. The humdrum life of the average practitioner of medicine does not appeal to such men; moreover, they are usually not believers in the free use of drugs. At that time so-called laboratory work was unknown, if we except dissections. Darwin himself revolutionized the study of medicine, which is really a branch of biology.

Among my scientific friends are several men who have medical degrees but who soon became dissatisfied with the practice of medicine and instead took up teaching; to be in competition with a lot of symptom-prescribers was distasteful. More than one has told me that the study of ill health and perhaps disease in the light of environmental influences appealed to him. Indeed, one man almost decided to take up practice again, after a "little brushing up," but when I explained to him the difficulties one encounters, especially how one must swallow his pride in dealing with disagreeable people and always be on the lookout to earn enough to make a living, he abandoned the idea.

Medicine is too often considered in the light of a science, and the physician as a scientist. The science of medicine is of course based on many sciences. The practice of medicine however is an art based on other arts. We need only consider the art of pleasing people, such as the "disagreeable dyspeptic" and the "sharptongued neurotic." The man who practices purely as a scientist and the man who practices without a knowledge of science are both out of their element.

The biographies of three Englishmen who visited our country are of especial interest, those of Charles Dickens, Thomas H. Huxley, and Herbert Spencer. All three men were dust victims and suffered more or less severely while here. They suffered in proportion as they were exposed to "crowd poison." The explanation is perhaps not far to seek but to explain it briefly is a difficult matter.

CHARLES DICKENS was the son of a poor government clerk and at first had a hard struggle for existence. Perhaps this is the reason he was always in sympathy with the poor. He was early apprenticed to a shoe-blacking manufacturer at starvation wages and was habitually in want of sufficient and proper food. After additional schooling he learned stenography and became a court reporter and finally a newspaper reporter. Then he began to write fiction. The "Pickwick Papers" at once made him famous, and his days of poverty were at an end. "David Copperfield" is said to be mainly autobiographical. At the age of thirty he made a visit to our country, no doubt to broaden his horizon. His "American Notes" and parts of his "Martin Chuzzlewit" were the result of this trip.

Charles Dickens made two visits to our country, one in 1842, as a young man, and one twenty-five years later, at the age of fifty-five. If I were to characterize these two trips, according to his American Notes and according to Forster's biography, and the volume of letters, I would say that the first trip is remarkable on account of the many references to our national tobacco chewing and spitting habit, and the second on account of the numerous references to ill health; he was constantly on the point of breaking down, and indeed shortened his tour to get back home. His read-

ing tours had serious consequences; they undoubtedly hastened his death.

When Dickens first came to us he expected to find a free country, a free people. He expected more real liberty than in England. In this he was disappointed. He found that many people were held in slavery (the negroes), and that others were subdued by public opinion (or shall we say newspaper opinion?); that many did not dare to speak out openly—a fact impressed upon us today: Boost, Don't Knock. He saw that we were too contented with ourselves and made no radical effort to better conditions.

On his first tour Dickens was little confined indoors, in fact he travelled mainly during the open door season, and chiefly by stage coach and canal and river boat, and, being a vigorous young man fond of outdoor exercise, he escaped ill health; at least there is no mention in his biography.

Dickens's second American tour is of interest to the physician, to the student of common ill health, on account of the many references to ill health; they occur on almost every page.

In the very beginning he was attacked by colds and "American Catarrh." The latter is eminently an indoor affection, transmitted from one to another through the medium of pulverized catarrhal sputum. The biography and letters speak of overwork but really there was less work and less worry than there had been in England. Everything was planned and arranged for him; he merely appeared on the stage for an hour and a half or two hours and then his work was over. But there was overwork. The defences of the body in getting rid of infection were overworked. He was constantly inhaling infected dust and reacted acutely, frequently being on the point of breaking down. The spitters no doubt were absent from his audience but they had been there the evening before. Then too we must consider the handkerchiefs that are shaken out, particularly in saluting such a man. One can see that besides being afflicted with American Catarrh, Dickens also had American Dyspepsia and was always on the verge of American Nervous Prostration.

Dickens had planned to come as far west as Chicago but did not get further than Buffalo. Had he come, for instance, into the heart of the spitter's country he likely would have shared the fate of his son, who recently died shortly after a visit to the Middle West, where he lectured before a large audience in a poorly ventilated hall.¹ Charles Dickens shortened his visit for fear of a total collapse. He felt that the only way to get rid of his American Catarrh, and other ills or symptoms, was to leave the country. In this he was not disappointed, for he tells of his catarrh beginning to leave soon after getting out on the ocean. Any one can understand that ocean air means good air.

Dickens had early noticed the influence of environment, and when things did not go well with him he took a long walk into the country. One of his biographers mentioned the fact that Dickens had a theory that, "To every portion of the day given to labor should correspond an equal number of hours spent in walking." He mentioned that his best loved walks were on the cliffs and across the downs by the sea and that he had remarkable powers of endurance as a pedestrian. We see this theory more or less applied in his writings, where if things do not go right he takes his characters out into the open air.

Unfortunately on his second tour he did not live up to his theory, he did not offset hours in bad air by hours in good air. Shall we say that infective matter or toxic products accumulated at a greater rate than the defences of the body could get rid of them?

After a short rest in England, Dickens concluded to give one more series of readings in his own country and then retire to his

I went to hear these lectures, and as a result carried away a "cold that hung on" for two weeks. I went hoping to escape but got caught. I have no doubt that many others in that audience were similarly caught.

country home. One is reminded of the suburbanite who jumped off his train before it came to a stop. He did this a hundred times but he did it once too often. To the student of common ill health and environmental influences it is clear that Dickens should not have attempted to give another series of readings after his American tour; his health was too much shattered. In fact he did not complete the final series. One feels that he died prematurely. He evidently was a cardio-vascular dust victim, with a high blood pressure.

There are any number of topics that one can work out from the data contained in Dickens's biography and letters. A very interesting one is his relationship to the medical profession. One would assume that a man of such eminence would have the best physicians of the community and country, and this in general was true; but unfortunately the medical men whom he consulted were surgeons rather than physicians. Today there is of course a greater gulf between the two than at that time. When we think of a surgeon we think of surgical operations. The surgeon is not concerned with "mere ill health," its cause and prevention. But on the other hand the physician of the best type, especially today, is always seeking to prevent, not only disease but also common ill health. He tells his patient what to do and what not to do. He even seeks to avoid the need for surgical operations. Properly considered, Dickens never got the square deal from the medical profession. The medical men did not study him in the light of the influence of environment. On carefully considering all the data as given in his biography and letters, one arrives at the conclusion that Dickens, until perhaps the very end, did not have any well-defined This thought bears repetition. It would seem that his chronic ill health was merely an expression of unsanitary life conditions, particularly bad air conditions. Practically all his symptoms must be considered in the light of warnings from nature to desist, to get out into good air. Dickens like Huxley felt well physically almost as soon as he got out into the country—but country life means isolation.

Dickens's influence on the masses was great. He was a sanitarian, but not of the trained, salaried kind; he was a sanitarian by instinct, so to speak. He saw unsanitary conditions that failed to be recognized by the medical profession of his time—and only too often by present day physicians. He was not a scientist; he was a literary man. In writing about unsanitary conditions, especially of the lives of the miserable poor, Dickens did not appeal to the reason; his appeal was to the emotions. He wrote novels, fiction, but, very important to note, his stories were not spun wholly out of his brain; they are based on facts, on personal observations. As a writer he depended for inspiration upon long walks about the city, he knew London thoroughly. He got into all the back streets and alleys and slums generally. He studied humanity as well as the influence of environment at first hand.

The influence of Dickens as a sanitarian crops out especially in the education of children. His influence was great. Among other things he insisted upon large and well-ventilated school rooms. And yet we say Dickens is a caricaturist and out of date!

That Dickens clearly saw the influence of environment is evidenced by the fact that his outdoor people, farmers, fishermen and sailors, are strong, robust, ruddy faced people, while his indoor people, city people, are thin, sallow, sickly, usually undersized, the exceptions merely bringing out the contrast.

Dickens was eminently sane in his views regarding sanitation. He fully realized the importance of cleaning up. Cleanliness is the great remedy for poverty and for the "slum disease" and for ill health dependent on unsanitary surroundings. His novels are full of references.

It is to be regretted that Dickens did not live a few years longer and write a novel dwelling particularly on the evil influence of an unsanitary environment. He could have appealed to the masses as a sanitarian by instinct.

We need a Dickens to describe unsanitary conditions in our country, some one to tell us of the importance of cleaning up. As matters stand, we rely too much upon authorities, often incompe-

tent and negligent. As already mentioned under schools, parents expect school authorities to do everything. Moreover the people do not properly support Boards of Health. Unfortunately, these are too often composed of physicians who are mere figure-heads. The people should be represented more directly on Boards of Health. There should be business men, manufacturers, teachers, lawyers, perhaps even a preacher, on our Boards of Health, and certainly a club woman interested in the matter of health and ill health. The women can show the men how to clean up. Individuals who are mere figureheads should be recalled.

Although Dickens had much to say regarding our national chewing and spitting habit, he never traced the relationship of our "Triad of National Diseases" to it. He did not even mention that the tobacco chewer encourages others to spit, notably those who are catarrhal or tubercular. If he had had only an inkling he might have written a novel directing attention to pulverized spittle as a cause of national ill health, impressing the people as no scientific writer can.

THOMAS H. HUXLEY. Huxley came to London as a young man. He withstood bad air conditions quite well at first but in the course of years complained more and more. He started out to be a physician but ultimately became a teacher of some of the sciences on which Medicine rests, and that means he was constantly in contact with the best medical men of London. The two volumes of Life and Letters are full of references to ill health. As a matter of fact his ill health must be regarded as a reaction to an unsanitary environment, to bad air conditions. His physicians at times would send him to the country, to Switzerland, and even to Egypt, and his health would improve at once, but he would relapse on getting back to the city. Of course he had all sorts of opinions from doctors. Although Huxley did not know of dust infection (he lived before the days of bacteriology) yet he realized that air conditions and crowds influenced him; he learned many little things about avoiding ill health. He was continually trying to find his limitations. When he came to this country he was careful about avoiding crowds. He gave only a few lectures to selected audiences; had he done otherwise one feels he would have broken down. After quitting London and residing on the seashore, he took a new lease on life. He lived beyond the allotted "three score and ten."

It is interesting to note expressions used by Huxley in telling about his bodily condition, about his ill health. Besides common terms such as coughing, headache, nausea, and vomiting, he uses such expressions as shaky voice; scarcely had a voice; morbid state of mucous membranes; a shot at bronchitis; confounded stomach; hypochondriacal dyspepsia; intestinum colon plays a trick every now and then; general nervous depression; blue devils (used repeatedly); curious nervous irritability; hypochondriacal depression; neuralgia or rheumatism or whatever it is. There is a long list of such and similar expressions.

HERBERT SPENCER was likewise a dust victim but unlike Huxley his work did not bring him in constant contact with the best physicians, in fact he complains that some physicians whom he consulted did him more harm than good. Like Huxley he was always trying to find his limitations, under what conditions he could live with the least ill health. He spent much time on vacations in the country. Huxley tells how he was trying to find his juste milieu, the conditions under which he could best exist; Spencer speaks of wanting a keeper, some one who will tell him what to do and what not to do.

When Spencer came to our country he was exceedingly careful to avoid crowds. He was importuned to give public lectures but refused, although the terms were flattering and he greatly needed money to publish his books, since they appealed to a limited number of readers only. Spencer lived on to old age. He may be cited as an example of the English saying, Acquire an incurable disease and live long, always keeping in mind what "disease" means.

A study of the life and writings of these three men is also of interest on account of their views regarding education, "What education is of most worth?"

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PERILS AND A REMEDY.

We are constantly told of perils and chief perils that threaten us, our cities and our country, if not the world as a whole, and how mankind is on the verge of extinction. Those who unduly magnify perils are called alarmists. Those who study certain topics may see perils that wholly escape the observations (or shall we say the "imagination"?) of others. Some articles in newspapers and magazines make use think, others make us smile, depending largely on the viewpoint.

In discussing the dust problem with patients a physician finds all sorts of people, those who make light of the whole subject to those who see the gravest danger and who wonder that they are still alive or that man has not long ago disappeared from the face of the earth. To the one class the physician must show that the dust peril is a real peril, that it is in operation all about us, not only in the production of ill health but in destroying life as well as in the matter of "race suicide." On the other hand those who are unduly alarmed must be told that the very fact that they are alive is good evidence that the danger is not as great as they believe, think, or imagine. Although the susceptible are constantly being killed off, there are any number of survivors that can live under present day conditions, although perhaps complaining more or less of ill health. One can point out that under sanitation many diseases have practically disappeared, some are known only by name, and that the average length of life has been greatly increased. Just as there has been a diminution of diseases and ill health on account of getting good water, so there will be better health with good air.

There are perils everywhere, by knowing about them we can

largely guard ourselves. Our street car company recently put up signs regarding the peril of stepping off backward. In issuing these warnings the street car company aims to protect its passengers and also itself, injuries are often wholly avoidable or preventable. Many people are always getting off backward in all walks of life. They are surrounded by all sorts of perils, they must be told how to act. We hear much of publicity to-day. It is becoming clearly recognized that when a peril is freely discussed we are on the right road to lessen it.

Dr. Saleeby in his very sensible book, Health, Strength and Happiness, says in the very beginning:

"Such books as this might be are amongst the chief makers of hypochondriacs—people who make themselves ill by trying to keep well." (p. 9.)

A few pages further on under the head of "The Need of Air" he says:

"A full discussion of this question can not injure even the most suggestible and hystorically-inclined woman. I really do not think that any one can be too fussy about the need of pure air, though millions of people are too fussy about the need for its exclusion. Such persons have, in every case, made themselves susceptible to draughts, and can undo their burdensome handiwork. Further, the man or woman who is fussy about the need for fresh air is benefiting other people besides himself, and earns, though he does not obtain, the thanks of all except the tubercle bacillus. I hope this chapter will afford fresh power to his elbow." (p. 25.)

THE REMEDY. When an alarmist points out a peril he usually also suggests a remedy, what we must do to be saved. To what extent is dust a peril? Views are apt to vary widely. The marked dust victim may over-emphasize it. The immune may make light of it. Those who have never had their attention directed to the subject are likely to consider the matter largely in the light of their own susceptibility. The reader should not arrive at hasty conclusions, now that his attention has been called to the matter he should observe.

Of course everybody tries to avoid dust, many merely because it is dirty, it soils the clothing, it is disagreeable, unpleasant. They

regard it as a nuisance rather than as a menace to health. The wise physician when he sees a dust cloud coming down the street says, There is money in that for me—if the people only knew!

During the open door season, during summer, the doctor, the general practitioner, has little to do but he knows the moment the schools open and the children are massed together in unsanitary school buildings he will begin to get busy and when the cooler days come and people house themselves up he gets very busy. Medical inspection of school children has been brought forward as a remedy, as far as relates to school children. To inspect and to report does not mean to prevent but that no doubt will be the next step. Cleaning up is the remedy. The community as a whole should be inspected and made clean.

Formerly cities were very unsanitary, as they are still in backward communities. On account of the massing of humanity ills and diseases of all kinds were rife, morbidity and mortality rates were high. To understand this fully we must read about conditions as they existed a hundred and more years ago. New countries largely go through the same cycle as the old ones. Adam Smith wrote of the large number of children born to Scotch mothers and how out of twelve or fifteen only one or two would survive. At the same time Benjamin Franklin was telling of the large families in our own country. Since then conditions have radically changed. Old European cities have cleaned up and have greatly reduced their death rate; cities are almost self-sustaining now, no longer dependent on the constant influx of country blood. On the other hand conditions in our own country have grown progressively worse, as evidenced by small families and the cry of race suicide. Although we are able to keep out many diseases such as cholera and the plague, yet many of the old time diseases flourish in our country, besides a host of maladies that manifest themselves as ill health rather than well defined disease.

In early days there was no milk problem, but today this is a serious one in large cities, and even in the small cities. To the man who keeps a cow it is no problem at all. Milk becomes impure mainly on account of passing through many hands. Similarly the water problem is a serious one to cities but is no problem to the isolated farmer.

It is not alone human beings who suffer from massing, we see the same thing among plants. There is increasing difficulty in raising farm and garden crops. When the soil was still fertile and pests and parasites of all kinds were absent, anybody could farm, just as anybody could raise garden truck and fruits. Our National Department of Agriculture and our State Experiment Stations are engaged in telling the farmer and the horticulturist how to succeed under adverse conditions—but so far little effort has been made to tell him how to raise a family of strong and healthy children. The farmer who lives in isolation is still able to produce a large family of children but when he sends them to unsanitary schools or to unsanitary cities there is heavy loss. City people are reproducing themselves at so small a rate that there is a constant cry of race suicide.

During the last few years we have heard much about Conservation, chiefly about conserving our national resources, now that some are almost exhausted. There is even a movement to "conserve national health." All sorts of efforts are made to prevent the loss of human life. We have railroad commissions that seek to prevent accidents; they tell us how many hundreds of lives have been saved. Cities appoint pure milk commissions and tell us how many lives of infants are saved. Cities develop a pure water conscience, people demand and get good water and then we are told how many lives have been saved from typhoid fever. We have pure food laws and ordinances of all kinds and statisticians are inclined to speak of the number of lives saved. Physicians speak of their efforts in saving lives, as for instance in building the Panama Canal. There are all sorts of efforts but we are only beginning to realize the need for good air. This has manifested itself so far mainly by smoke commissions, seeking to do away with the "smoke evil." We are only beginning to understand the dust evil. If the people knew to what extent dust is the cause of ill

health and disease they would make radical efforts in dust prevention and in cleaning up.

The people simply do not realize the amount of ill health and disease that is dependent on the dust evil. Although in our country the amount of well-defined disease is being reduced the amount of ill health is increasing, for various reasons, chiefly from the fact that as sanitation reduces specific diseases people who ordinarily would have perished live on and are subject to ill health that is not sufficiently severe to kill. During the prevalence of an epidemic those who have a "lowered vitality," who have had more or less ill health are largely weeded out. In proportion as such diseases are kept in check people live on and on. Prudent people of course guard themselves at all times. The man in chronic ill health may be unusually careful. The well-to-do who can properly do this live on and on while the poor man who must work perishes early and only too often leaves a large family of small children. If the community as a whole were interested in sanitation the poor man would have a better chance of surviving, of reaching a greater age. Naturally there are all sorts of remedies proposed, especially superficial ones. While the sanitarian insists upon cleaning up, there are still people who oppose such measures. There is a sect of fanatics who deny that there is such a thing as disease, and then there are those who while not denying disease believe in ignoring it, who try to delude themselves. The "New Thought Movement" and faith cures have been put forth as remedies. But there is nothing new about these; such remedies are old, such views take us back to primitive times. The physician of today believes that most mental ills are dependent on physical conditions. The ancient Greek philosopher said, Know Thyself. The modern sanitarian advises, Know your city. The evolutionist tells us to study our environment, that our health and ill health are largely dependent upon it. Environmental influences may be regarded as the influence of surroundings.

In speaking of the evils entailed by the lack of knowledge of surroundings, Ward says: "Indeed, the greater part of all suffering is the result, direct or remote, of such ignorance. Obviously, therefore, the first great duty of man is to acquaint himself with his environment. This can only be done by study. The phenomena that lie on the surface are of little value. They mislead at every turn. Not only must the deep-lying facts, difficult of access, be sought out with great labor and perseverance, but they must be co-ordinated into laws capable of affording safe and reliable guides to human operations. To do this requires a vast amount of patient study. Only a little has yet been revealed of the more important truths of nature, yet consider the amount of research which it has required! Nevertheless, only a few individuals have contributed anything at all to the result. It is as yet only the simpler and more obvious relations between man and nature that have determined. In the domain of physical forces and chemical substances he is able to exercise prevision in many ways to secure advantages and avert evils, but in most of the higher fields of vital, mental, moral, and social phenomena, these relations are either utterly ignored or but dimly suspected, so that his knowledge of them avails him nothing. The great work before him, therefore, still is study." (Lester F. Ward, Dynamic Sociology, Vol. II, p. 11.)

He further says: "But what constitutes the environment of the civilized man? The character of the environment of animals and of savage man is easy to perceive. It is the earth, the air, the rocks and waters, the trees, grass, birds and animals, the last to include, in the case of the savage, the men of his own tribe and of other tribes, and also civilized races, in case any such ever come in contact with him. It is by learning to know these things that he is enabled to protect and defend himself.

"But, looking to races somewhat more advanced than the crude savage, we find, as frequently shown before, that their advancement has been due to action on their part in taking advantage of certain deeper laws of nature, in making use of materials that savages fail to make use of, in interpreting phenomena that savages do not correctly interpret, and, through these means, in devising plans and inventing appliances for multiplying the products of nature and increasing the supply of physical, social, and intellectual wants. And, when we have reached the highest forms of social existence, we find that the only effective means by which desire is gratified, progress achieved, and happiness attained, consist in still deeper knowledge of the natural surroundings, in a still wider grasp of laws and principles, in the correct interpretation of still more obscure phenomena, and in the discovery and invention of still better means and methods of securing remote ends. To know one's environment is to possess the most real, the most practical, the most useful of all kinds of knowledge, and, properly viewed, this class of information constitutes the only true knowledge." (Vol. II, p. 495.)

In discussing the expression "knowledge of the environment," Ward comes to the conclusion that it is co-extensive and synonymous with the word science. "Knowledge of man's environment is nothing more nor less

than scientific knowledge; and, conversely, all scientific knowledge consists in knowledge of the environment. . . . The only useful knowledge is that which furnishes relations. Isolated facts, until employed for this purpose, are not really employed at all. An object known only in itself can scarcely be said to be known. . . . Science is dynamic. Whatever it touches is transformed. The only object in knowing is by means of it to do something . . ."

Ward refers to the attenuation of knowledge and of getting away from things, and how especially in the Middle Ages men were inclined to neglect facts, and how science brings us back to facts and to nature. We can readily see how students of environment and environmental influences are not likely to be misled by the present fad of psychotherapy. Ward also refers to much of our literature as being simply a jugglery of words, pleasing to the ears, but of little value in keeping man acquainted with his environment.

Perhaps few of us realize fully the importance of environmental influences, of how our life, our thoughts and actions, are dependent thereon. No doubt many of us have at times wondered what our own life and the life of others would be under different surroundings.

Today we hear much regarding a return to the simple life. That is by some considered a cure for many ills, including race suicide. What do we mean by the simple life? Does it mean a return to earlier primitive conditions, to a stage, for instance, seen in the southern mountains where people are healthy and live long? It is sometimes said that the southern mountaineers are a hundred years behind in their civilization. Some countries are far behind. How many would prefer "fifty years of Europe than a cycle of Cathay"? How many after living the complex life of today are really willing to return to simple conditions? According to my experience there are so few that they are scarcely worth considering at all. There is of course much that can be simplified. "Good taste" itself seeks the simple. We often hear the rich and the new-rich compared; too many want to show their money by gaudy display.

As civilization advances and life becomes more complex a return to primitive conditions is not a remedy. People outgrow primitive ideas of religion, of government and State constitutions.

Even the physician outgrows the traditions of his profession.

Biography and the Influence of Environment, Ind. Acad. Science, 1908.

The old time physician was a good Samaritan who bound up wounds but the physician of today attempts to prevent the infliction of wounds. The old time physician promptly handed out medicine to those who came to him complaining; old tradition demands that any one applying to a physician should be given aid or relief and no questions asked regarding compensation. But times have changed. Not so very long ago the physician did not ask for a fee at all—he was supposed to be above that, he "expected a honorarium." The physician of today has gotten away from such ideas, he believes the laborer worthy of his hire and asks for his fee or sends in his bill for services rendered. The modern laboratory doctor is not bound by old traditions. He investigates fully before advising and prescribing, that means much time is given those accepted. He is apt to inquire in the very beginning what he will get in return. As in all other walks of life, the man who has little to give gets little. "For he that hath, to him shall be given: and he that hath not, from him shall be taken even that which he hath." The physician of today is inclined to place the blame for the prevalence of ill health and injuries of many kinds where it properly belongs. The people are beginning to realize that many injuries, as from railway accidents, are preventable; they are beginning to realize that many deaths from impure water are preventable, cities supply themselves with good water. We are beginning to understand that the ravages of tuberculosis are largely preventable by good air.

It is perhaps useless to attempt to teach old people regarding the importance of sanitation and hygiene, whose chief law is that of cleanliness. But it is worth while to teach the young; they learn readily and remember. The place above all others that should be clean, where in fact the importance of cleanliness should be taught, is the common school. From there the teachings are spread. But in order that the children may be taught the teachers must first be taught. Where shall the process of teaching the importance of cleanliness begin? Shall it be left to the authorities or shall it be left to the people? Or do the people still expect the

general practitioner of medicine to teach them? As a rule people do not call upon the physician until they are sick; is the bedside a good place to teach the importance of sanitation? Who makes the best street commissioner to direct street cleaning, a man or a woman? Who makes the best sanitarian, the physician in private practice depending for his bread and butter on the misfortunes of his fellow-citizens or the trained sanitarian paid by the community, the man who has nothing to lose from the enemies he makes? Is it necessary to add that the right of a man in ill health to prescribe for himself or to employ some one to "doctor" him will likely be conceded? The wise man will likely employ a skilled physician to look after him, just as the wise community will employ a skilled sanitarian to look after the communal welfare.

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APPENDIX

[22] (337)



WHERE THE TOBACCO SPITTER LOAFS-In Front of a Bank.

In Front of a Grocery.



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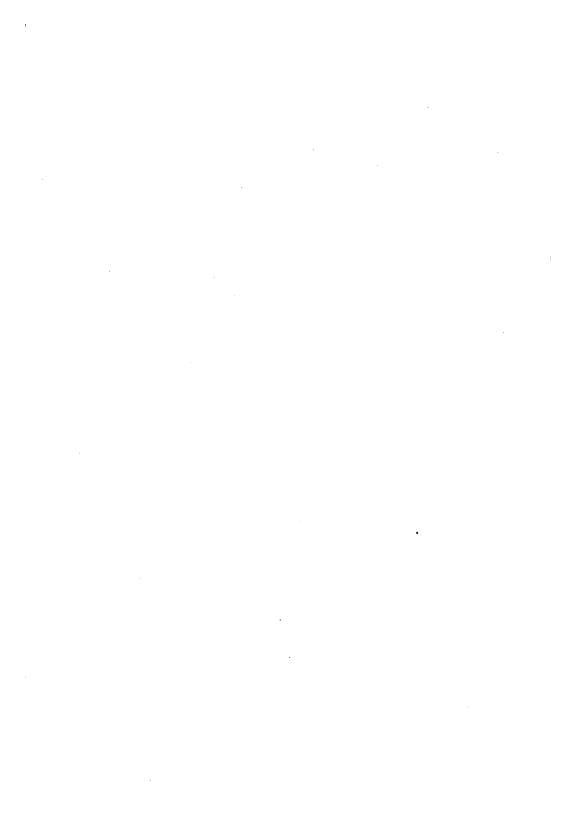
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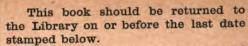




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